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BAKING IN THE OLD BRICK OVEN.

*THE HOME-MAKING SERIES*

# FOOD AND HEALTH

*AN ELEMENTARY TEXTBOOK OF HOME MAKING*

BY

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# PREFACE

THIS volume, like its companion, *Clothing and Health*, is intended for use in the elementary schools in those sections of the country where the home life is of the type described. It is hoped that both volumes will be used by the home people as well as by the school children. This volume treats largely of food problems, including something of raising food and of selling it, in addition to the preparation of food at school and at home. Such topics as the water supply, disposal of waste, and other sanitary matters are woven in with the lessons on nutrition and cookery. There are a number of simple recipes, all of which have been carefully tested, and some of which have been taken from *Foods and Household Management*, Kinne-Cooley. The authors again acknowledge their indebtedness to Mrs. Lincoln, Miss Farmer, and Miss Barrows. Several recipes are adapted from *Just How*, a key to the cook books, by Mrs. A. D. T. Whitney; and others are original and have been contributed by other friends. A number are borrowed from *Home Economics Recipes* by Miss Mary Beals Vail, now of Mills College, California, formerly of Teachers College, Columbia University. Professor Van Arsdale, Miss Bertha E. Shapleigh, Miss Mary McCormick, Miss Mary E. Pillsbury, all of Teachers College, Columbia University, and several of their students kindly assisted

in arranging for photographs. Indeed, the authors are indebted to the members of the staff of the School of Practical Arts for their friendliness and inspiration.

The volume is greatly enriched by pictures and notes culled from the bulletins issued by the New York State College of Agriculture at Cornell University; and the authors are glad to aid thus in extending beyond the boundaries of New York State the valuable work accomplished by Miss Martha Van Rensselaer and other members of the University staff.

The picture of the Pleasant Valley School is adapted from a photograph of a school in Mendocino Co., California, kindly furnished by Mrs. Anna Porterfield, County Superintendent. Several illustrations have been adapted from cuts in bulletins published by the Ohio State University.

The pamphlets published by the Government Bureaus at Washington, D.C., are, also, a source of interesting and accurate information for all the citizens of the country.

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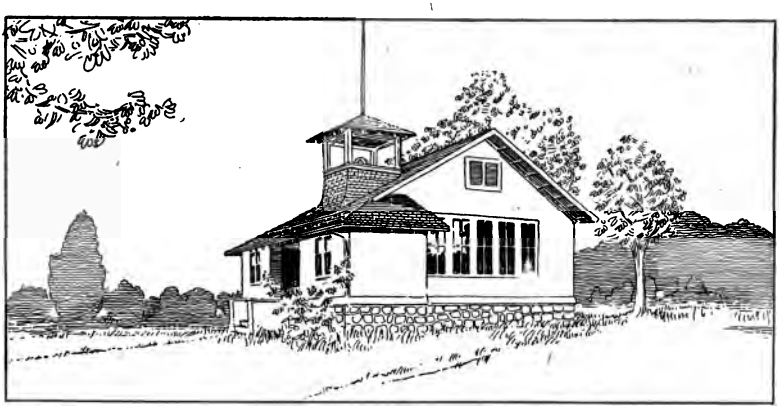


# THE PLEASANT VALLEY SCHOOL

THIS is a story of the way in which the mothers and fathers, the teacher and pupils, and their friends in the township work together to make the broad valley in which they live truly a Pleasant Valley. The new school stands where the little red schoolhouse was built for those who are now grandmothers and grandfathers, when the town was first settled. The old building had become too small for all the young folk, but everybody loved the place; and it was not until a fire had destroyed it that money was voted for larger and better housing for the school girls and boys.

This small book can describe only a part of every-

Marjorie Allen, however, is a wide-awake girl, who has read in the farm journal at home some interesting articles about food, and has noticed that the Department of Agriculture at Washington, D. C., and the University in her own state have printed bulletins for the farmer's wife about nutrition, cookery, and housekeeping. There are other pamphlets, too, for girls, explaining canning clubs, and bread and sewing contests. These pamphlets and books, also on the same subjects, have helped Marjorie to understand that there must be something to study; else why are books written and printed? Moreover, Marjorie is an unselfish girl, ready to help her Mother when she can; and so she is glad to find among the new books for the year's study one or two about homemaking.

FIG. 1. — Marjorie Allen.

**What do we know about food?** We cannot answer the question at the beginning of this chapter in full, without studying and thinking and working. Perhaps not until we reach the end of the last chapter can

we tell what are the important, useful facts about food. But it is true that each girl knows something about food, at least enough to be able to decide upon what she likes. Probably she has been told that some foods are more wholesome than others. Even the living creatures about us have some instinct that guides them to foods desirable for them. Have you ever seen a squirrel eating a toadstool that you would not dare to taste?

**Why do we take food?** It is interesting to notice what the lower animals are eating; for some kinds of food we share with them, and what food does for them it does for us. There are the calves, who live at first upon milk, like the baby at home. We can see how much they have all grown through the summer. The awkward, long-legged fowl running about with such energy are very different from the balls of yellow down that came from the shell in the spring. They have lived upon grain chiefly, but see what they have gained in weight! One astonishing thing about the young wild birds is their rapid growth; and, although angleworms would seem a disagreeable diet to you, the young robins like them as much as you do mutton chops or roast beef.

**Food for growth.** One fact, then, about food is this: it gives us material for our bodies, for making bones, muscle, fat, blood, hair, and teeth. But more important still is the fact that some foods build our bodies better than others. The picture (Fig. 2) shows that

there is a difference in the feeding of animals; for these pigs are the same age, and belong to one family, but they have eaten different kinds of food.

*Courtesy of the United States Department of Agriculture.*

FIG. 2. — Litter mates.

When the Pleasant Valley pupils looked at this picture, John Stark was eager to tell the story of a prize pig raised by his cousin in the next town. This is the story:

Frank Ross, who belongs to a pig club, had a contest with his uncle. From the same litter they selected two pigs as nearly alike as possible.

Frank followed the directions given by the U. S. Department of Agriculture, and his uncle treated the other pig as he had always done. This is what happened:

| | WEIGHT | COST OF FOOD | SELLING PRICE |
|---|---|---|---|
| Frank's pig . . . . . | 520 lb. | $15.54 | $58.00 |
| Uncle's pig . . . . . | 65 lb. | 5.00 | 8.00 |

Think over what we have just said about the calf and the chicken, and you can name two kinds of food that are good body builders. There are no wild creatures near Pleasant Valley that live upon flesh, except the hawks among the birds; but where foxes are still found they thrive upon meat food, and, of course, the young lion of hot countries grows upon a flesh diet.

**Food for life and work.** Food plays another part that we

can understand when we recall what happens to people who starve in times of famine or war. The body becomes weak, unfit for work, and all movements finally stop. Sit perfectly still for a moment. Are all parts of your body quiet? No! Your eyelids are winking, you are breathing, your heart is beating; and there are other movements which you cannot feel, such as the constant flow of the blood. Touch your own hand, — how warm it is! Your clothing makes you warm only by keeping in the heat of your body. What, then, is the source of this heat? You can give the answer yourself, can you not? It is your food that gives you body warmth and power to work. All the foods already mentioned give this energy. What facts about the baby and calf and young robin prove this? The sugar and the fat in the milk are two substances that furnish the energy, and for this reason they are called fuel foods. Another substance found in milk and meat is both a body builder and a fuel food. This substance you will study in Lesson 4.

**Water and mineral matter.** Water is another important part of our food and drink. Still there is something else, that we cannot see, which serves as food for the body. When wood is thoroughly burned, you know that it leaves ash. Food materials do the same thing when they are burned as completely. This white or gray ash does not burn because it is made up of mineral substances, lime, iron, and many others. These are most important for our bodies. Both water and

the mineral substances help in body-building. We shall learn more about them later on.

**Other interesting facts about food.** You can make your own list; for surely facts about preparing food so that it is delicious to eat, facts about serving it daintily, and knowledge of how to keep it clean, even of how to raise and sell it, and of how to buy it, will occur to you as worth knowing. One small book cannot contain all this information, but at least this book may help you to make a beginning.

**The year's work.** The heading of this chapter states our large problem for study during the year.

The projects, or pieces of practical work, for us are the school luncheon, the home supper, breakfast, and dinner. As we study each meal in the different chapters, we shall learn about the food materials and the dishes prepared from them suitable for each meal. Some of these dishes can be made at school, and most of them are useful for the home table.

EXERCISES AND PROBLEMS

1. Make a list of the foods you know, under grain, vegetables, meat foods, sugar, fats.
2. Can you give a fact that shows the egg to be a food that builds the body and gives energy?
3. Why is the body sometimes likened to an engine?
4. Can you tell how it is different from an engine?
5. Explain why milk is a food as well as a drink.

# CHAPTER II

## LUNCHEON AT SCHOOL

### LESSON I

#### PROPER FOODS FOR THE SCHOOL LUNCHEON

WHAT are some of the foods that make a proper school luncheon? Can we prepare any of them at school?

Luncheon is an interesting part of the school program, is it not? especially when it is a good one. Marjorie Allen always takes something from home in her dainty luncheon box, and she is quite likely to offer a taste to some one else. Marjorie has sandwiches made from light, sweet bread, eggs especially prepared, milk, a slice of plain cake or a few cookies, and fruit or jelly in a small glass to be spread upon the bread. The different kinds of food are wrapped separately in paper, either plain and perfectly clean, or paraffined. A paper napkin is in the box, too. Marjorie uses a paper box,

which is burned afterwards with all the other papers and never thrown about to make the school yard untidy. This fall, however, Marjorie is bringing vegetables to school, and is talking about making cocoa. She is suggesting to the girls and boys in the Pleasant Valley School that they have a luncheon club and make lunch a feature of the day, instead of eating almost any thing as fast as possible in order to begin play. And what is the plan?

*Courtesy of Mrs. Hetty Browne.*

FIG. 3. — The boys and girls of Pleasant Valley have a luncheon club and make lunch a feature of the day.

**Planning a lunch club.** There are several ways in which the club can run the luncheon. Of course the members should vote on the matter. The teacher and the mothers will be consulted; and they will surely approve the plan, if it is workable.

According to the old-fashioned way, each pupil brings a lunch in pail or box, and each has his own. The first step to make it pleasanter is the arrangement of some kind of table, which need be nothing more than boards set on boxes, either outdoors or inside. Paper napkins may be used, and a place laid for each pupil. This makes luncheon a picnic every day.

There is another method, already the fashion in some

schools, which is not difficult. Each pupil supplies one kind of food material, and each takes his turn in bringing a different kind. Two or three furnish milk; others bread or fruit or vegetables or whatever is convenient, the whole scheme being planned ahead. Of course, the division must be fair to all; and there is a chance here for some practical arithmetic in finding out the cost of materials and dividing the expense evenly.

When Marjorie proposes having vegetables as well as fruit, somebody says, "But we can't eat them raw." Then why should we not cook them?

**Cooking at school.** "What can we have to cook with at school?"

This will depend upon the yard and the size of the school. If there is plenty of room around the building, you already know one simple arrangement; for it is hardly possible that you have never roasted potatoes in the ashes of a fire out-of-doors.

A fireplace of stones or brick may be built and vegetables roasted; an old pail may be hung on a stick laid across the stones or, better still, on an iron bar or rod which may be found in some old scrap heap or at the blacksmith's. Wonders can be accomplished also with an old stove, which some one would be glad to give. John Alden is an energetic boy at Pleasant Valley School, ready to do carpenter work or to engineer the making of a stone or brick fireplace for cooking food at school.

If there is a shed in which it can stand, perhaps a

friend will contribute an oil stove. In the picture (Fig. 4) you will see the equipment for cooking which may be made from packing boxes that the grocer gives away.

*Courtesy of Bureau of Publications, Teachers College, Columbia University.*

FIG. 4. — An equipment for cooking may be made from packing boxes.

The boxes may be stained or painted white. This painting is pleasant work for a rainy day. If the mothers are interested in the club, they may be willing to give a few utensils; but, if the members of the club are very independent, they can buy their own. Only a few are needed and the expense will be slight.

*Courtesy of President M. M. Parks, Georgia Normal and Industrial College, Milledgeville, Georgia.*

FIG. 5. — A neatly arranged school cupboard. 1, wide-mouthed pitcher; 2, covered saucepans; 3, double boiler; 4, wire strainer; 5, Dover egg beaters; 6, measuring cups; 7, bowls; 8, knives, forks, and spoons; 9, "utility" plate, for cooking work.

In cold weather the luncheon can be prepared in the schoolroom; and, if the heater has a flat top, cooking can be done on that. A fireless cooker to use at school is convenient and can be inexpensive. (See Lesson 26.) If you have never tried it, you will be surprised to see how many delicious luncheon dishes can be made in the schoolroom.

If your school has a well-furnished cooking room, preparing luncheon at school is an easy matter.

*Courtesy of Miss Jessie D. Ebert.*

FIG. 6. — Serving luncheon at the Big Tree School.

At the Pleasant Valley School the work began with very simple equipments. Marjorie Allen heard of the school lunch club from a cousin who lives in New York

State. Miss James, the teacher at the Pleasant Valley School, asked Marjorie if she would not write to her cousin and ask for a description of her club. This is the answer to Marjorie's letter:

The Big Tree School,[1]
September 5, 1915.

Dear Marjorie:

Yes, indeed, our hot lunch club is a great success. This is the way we began: There is a farm bureau in Erie County, and we celebrate Corn Day. We children at the school had a bread contest to which everybody came. Our mothers and fathers were so pleased that one of the trustees put some cooking equipment into our basement, and we use an old bookcase with glass doors for our cupboard. There are twenty-four of us in our cooking class, and each family gave twenty-five cents for buying dishes. We brought our own note-books, spoons, cups and plates, aprons, soap, and hand towels; and we met every Wednesday afternoon. Then, as we had begun to have cooking lessons, our teacher thought we might as well have a hot lunch; so we had a warm-food club. Most of us come a long way and bring luncheon, and so we began by making only one or two hot things like cocoa, soup, stew, boiled rice with raisins.

This is the way we plan for the lunches. We have a

[1] The information given in this letter was kindly furnished by Miss Jessie D. Ebert, District No. 27, Hamburg, Erie County, New York. Some of these facts were published in the East Aurora *Advertiser*, May 27, 1915, and others were written in a private letter.

committee that meets our teacher at twelve o'clock every Friday, and plans luncheon for every day for next week. We decide which of us shall furnish food and what food each one of us shall bring. We name the helpers for preparing the food each day, also. At one o'clock the committee passes a slip to those who are to furnish food, telling what food they are to bring and on what day. Sometimes one girl or boy changes with another. We have a book and keep a list of everything, so that nobody shall do more than his share. Usually each family does not furnish food more than once a month. It does not cost so very much either, — about ten cents each time one of us brings something. Here are some of the other things that we like: potato soup, baked beans, bean soup, tomato soup. Sometimes we make the things at home when mother is willing, and bring a pan of beans or macaroni, or something else, to be warmed up. Some of us did not join the club, but any one who is not a member may buy a cup of hot food for one cent. Usually two girls are appointed to do the cooking. Sometimes it is begun before school or at recess. At 11:45 the girls finish the luncheon; then we wash our hands, and sit down at our desks to be served. The girls, with one or two others to help, serve all of us. We take turns in washing the dishes; and it is funny that we never seem to mind it at school. We would not give up our lunch club for anything.

Your affectionate cousin,

Polly.

**Packing the luncheon.** When food is done up in packages, it should be neatly wrapped (see page 301).

If called on to act as judges in a luncheon-box contest, we might draw up for ourselves a score card like the following:

SCORE CARD

LUNCHEON-BOX CONTEST

| | Rating |
|---|---|
| 1. Neatness of box or wrapper | 5 |
| 2. Appearance of the inside of the box<br>Neatness<br>Daintiness | 25 |
| 3. Quality and preparation of food<br>Excellence of preparation | 35 |
| 4. Selection of food<br>Fitness for purpose | 35 |
| | 100 |

*Courtesy of the New York State College of Agriculture at Cornell University.*

EXERCISES AND PROBLEMS

1. Make a list of simple utensils that would help you in preparing food at school. You can recall those used at home.
2. What plan can you make for washing dishes?
3. Can you think of some way of avoiding dishwashing, or of having as little as possible?
4. Make a list of luncheon dishes that you think you might make at school.

## Lesson 2

### WATER AND FRUIT BEVERAGE

**What** can we prepare to drink at school in addition to water, on warm days in fall and spring?

Let us think about some of the ways of making agreeable cool and hot beverages.

**Fruit juices with water.** "What fruits may be used in place of or with lemon juice?"

The answer to this is very simple: any fruit that is acid and juicy, and has a decided flavor, makes a pleasant drink. The beverage is wholesome, if one does not take too much and if it is not too sweet. Perhaps we are all more used to making lemonade than any other fruit drink, but the Pleasant Valley Club is trying other fruits on some of the warm days in September. Marjorie Allen experiments at home; when she sees that her Mother is warm and tired, she surprises her with a glass of cool fruit juice and water. Strawberry, currant, and raspberry juices are delicious in this way, and so is the juice from tart summer apples, slightly cooked. Canned fruits, jellies, or jam may be used; and, if the flavor is flat, a little lemon juice or cream of tartar may be added.

"How does Marjorie make the fruit juice into a refreshing drink?"

Marjorie sees first that the water is cooling. She allows one fourth to one third cup of sugar to a quart of water. Can you explain why the quantity of sugar

varies from time to time? If it is convenient, she melts the sugar in some hot water. Why? Next she prepares the fruit. The lemons must be washed, cut in two and squeezed, and have the seeds strained out. A glass lemon squeezer costs only five cents and is very handy. Two or three lemons to a quart of water will be enough, depending on the size of the lemons.

If Marjorie is working with another kind of fruit, she must squeeze the juice out, sometimes after cooking. The amount used must be "to taste"; or, if currant jelly is at hand, two or three teaspoonfuls to a glass of water are enough.

Marjorie has a dainty way of tasting things with two spoons, one for dipping out, and the other for the tasting. Finally, the water, sugar, and juice are mixed in a pitcher and cooled on the ice. When there is not ice, wrap a wet cloth around the pitcher and set it in the breeze. Do you know why this cools it?

These beverages may be prepared at school as easily as at home. Here is a chance to use your arithmetic in calculating the quantity.

**A cool drink.** On a hot day, the men in the field are glad of some refreshing drink. One of the girls in the Pleasant Valley School was taught by her grandmother how to make an old-fashioned beverage.

Have ready molasses, cream of tartar or vinegar, ground ginger, and nutmeg. Use about a quarter of a cup of molasses to a quart of water, and a teaspoonful of cream of tartar, which some people think more whole-

some than the vinegar. Stir into the molasses a teaspoonful of ground ginger and a grating of nutmeg, and mix all with the water. It is better when one is heated to have a cool, rather than an ice-cold drink; the temperature of well water is cool enough.

**Fruit-ade.** A fruit drink is sometimes called fruit-ade; and sometimes, fruit punch.

If the girls become very expert, they may be invited to make and serve a fruit beverage at a meeting of the Woman's Club or at some evening entertainment. Do not be afraid to try experiments with several kinds of fruit at a time. Use lemon juice first; add a glass of currant jelly, and a can of cherries or raspberries. Cut a banana in small pieces and serve in the fruit punch. Does some one say, "How odd to spend so much time talking about fruit juice and drink!"

*Courtesy of the U. S. Department of Agriculture.*

FIG. 7. — An old-fashioned open well is subject to surface wash.

**Why are fruit juices valuable?** They contain something most valuable to the body,—the mineral matter that you cannot see. How much better to take iron in fruit juice than in patent medicine. It not only tastes better, but the body can use

the iron in fruit when that in the medicine bottle is useless.

**Why should we be careful about drinking pure water freely?** Water is the important material in all our beverages, and we need to remember to drink it clear as well as flavored with other substances. It is found, too, in almost all our foods. Several years ago, when a number of Zuñi Indians were visiting the large cities of the eastern United States, some one asked them what was the most interesting object they had seen. One of them replied, "Water. You have all you want, and you can always get it out of a pipe in the wall." To people who live in dry lands, water is a precious thing. Do you know that we can live longer without food than without water? It helps to build the body, it aids digestion, it carries off waste matter, and it helps to keep the body at an even heat. It is given off from the body all the time, and therefore we need to drink freely many times a day. We may take it at meals; if we do not

*Year Book. Department of Agriculture, 1914.*

FIG. 8. — We cannot be too careful about the place from which the water comes. A cemented cover and carefully adjusted pump prevent surface wash.

drink it to wash down food, but between mouthfuls. Be careful to drink rather slowly; then you need not hesitate to take as much as you want.

*United States Department of Agriculture. Year Book, 1914.*

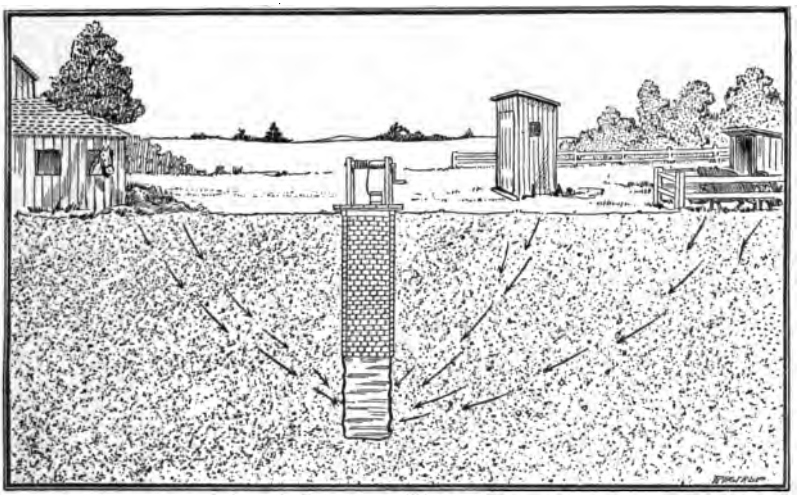
FIG. 9. — A cement or stone cover, with a trough beneath the spout of the pump, is a necessary protection for a dug well.

Yet this water may bring us illness, — and this we must study to prevent. Even though water is sparkling and clean, it may still be impure. As we cannot judge by its appearance, we must find out where the water comes from.

**Keeping water pure.** Nature has many ways of making water clean. Some of them are: letting it filter through the soil, purifying it in ponds and rivers; in both of which processes some of the lower forms of life known as bacteria, help. But when we allow large quantities of filth to get into the water, nature cannot always work fast enough, harmful bacteria grow, and sickness results if people drink the water. Typhoid fever, malaria, and other diseases are often due to impure water. We cannot be too careful about the

place from which the water comes; for such a disease as typhoid is often carried to people far away, and many lives are lost because some one person or family has been careless.

The picture (Fig. 10) shows how unclean material may seep into a well from a barnyard or outhouse.



*Virginia Health Bulletin, June, 1913.*

FIG. 10. — Unclean material may seep into a well from a barnyard.

Let each girl and boy study the water supply at home. If the water comes from a spring, see whether the spring is cleaned every year and covered. Are farm animals allowed near it? Is the well covered? (See Fig. 9.) Is it cleaned every year? Are slops ever poured near it? It is a good plan to have cement around the well. Remember that health costs less than sickness. At

times, if the doctor says that sickness has come from the water, it should be boiled before drinking.

Be watchful, too, about ice, because freezing does not kill certain harmful germs. If the ice is dirty and, indeed, unless you are very sure that it has come from

*Courtesy of Medical Review of Reviews.*

*Common drinking glass* *Recently washed glass*

FIG. 11. — Do not use public drinking cups.

a clean source, cool the water on the ice and never put the ice into the water.

**Be careful to drink from a clean cup.** Sore throats and even consumption (tuberculosis) may result, if more than one person drink from one cup or dipper. Each pupil should have his own cup. Paper cups cost very little. The luncheon club at the Pleasant Valley

School has decided to use them. Do not use public drinking cups. (Fig. 11.)

After a sad time, when diphtheria raged among the pupils of a school in another section, the Woman's Club of that town gave to the school a pump like that in the picture (Fig. 12). Do you see that the water is bubbling up and that the girl is drinking without a cup?

*Courtesy of the U. S. Bureau of Education. Bulletin 1914, No. 12.*

FIG. 12. — At the Pleasant Valley School a drinking fountain is attached to the pump. The water is bubbling up and the girl is drinking without a cup.

Water may contain lime and iron that make it "hard." If there is a large amount of the lime, it is best to boil the water for drinking. If the inside of the teakettle has a coating of lime, then you are using the kind of hard water that is improved by boiling. Sometimes to make water soft it is distilled. This is done by catching and cooling the steam. A distilling apparatus is made for home use.

EXERCISES AND PROBLEMS

1. Make a sketch of your water supply at home with its surroundings.
2. Make some plan for improving the water supply.
3. In what ways does water become impure?
4. Why is it important to use individual cups?
5. How much lemonade or other beverage would you prepare for fifty people? Estimate the cost.
6. What fruits growing in your locality, including wild berries, can be used for making beverages?
7. Explain why fruit juice is wholesome.

## LESSON 3

### COCOA FOR THE SCHOOL LUNCHEON

COCOA is easy to prepare for the school luncheon on the cold days of winter. What is the value of this and of other hot beverages; and what are some of the important things to think about in cooking them?

Milk or cream, and sugar give hot drinks some value as food. Grown people use coffee and tea because there is a substance in both of them, besides the flavor, that they think has a pleasant effect upon their nerves, although in the end most people would be better without either. Very agreeable beverages are made from roasted grain, and several of these can be bought. Of course, girls and boys do not take either tea or coffee; but there is no reason why they should not have a cup of cocoa for breakfast, and on cool days make it for the school luncheon.

**What is cocoa?** Cocoa and chocolate are manufactured from a seed somewhat like a bean, that grows in hot countries. The bean is roasted and ground, and from it chocolate is made. Cocoa is chocolate with the fat taken out. If you have ever seen cocoa butter,

*Courtesy of Miss Myra Hunt.*

FIG. 13. — A well-arranged school kitchen.

you know how this fat looks. Which will have the more food value, cocoa or chocolate?

**How to cook.** Let us now plan to make cocoa at school.

Cooking should be as dainty and pretty work as painting or sewing. We can make it so if we arrange neatly on the table everything to work with and do not spill food materials.

The illustration (Fig. 15) shows some convenient measures. See how the cups are divided. Of course,

*Courtesy of the Forecast Magazine.*

FIG. 14. — A neat working table and worker. Notice the fireless cooker.

*United States Department of Commerce, Circular of the Bureau of Standards, No. 55.*

FIG. 15. — Cups and spoons like these are convenient household measures.

FIG. 16. — The spoonfuls in measuring should be level.

everyday spoons will do. The spoonfuls in measuring should be level. (See Fig. 16.)

When we cook, we should plan everything carefully, and take out what we need for work. This saves time and steps. We must think beforehand of:

1. What to take.
2. How much of each kind.
3. What utensils to use.
4. How to put the materials together.
5. How to cook these materials, — apply heat.
6. How to serve the cooked food.

These are what the cook books tell you about in what is called a " recipe " or " receipt."

Mollie Stark, another Pleasant Valley schoolgirl, is making her own cook book. Suppose we all begin to do so, too. Mollie is using a notebook with loose leaves, such as we have in school. If the cover of your notebook is not a pretty color, you can make one of some washable material, in the sewing

class, perhaps, or for home work. Mollie illustrates her book either with drawings or with pictures pasted in.

**Making the cocoa.** A quart of cocoa serves six people very well, for the cups we drink from hold less than a half pint. How many quarts of cocoa shall you need for them?

Let us now, one by one, think of the points we must remember.

**Cocoa.**

*What to use.*[1] Cocoa, sugar, water, milk.

*How much to take.* Equal parts of water and milk. 8 teaspoonfuls of powdered cocoa to a quart of liquid. The same amount of sugar as of cocoa.

*Utensils.* This depends upon the amount of cocoa, does it not? You can plan this easily yourself. Remember that a large pail or kettle full needs a long spoon for stirring.

*How to make.* This is the one way that saves dishes: Heat the water and milk together. Mix together the cocoa and sugar, dry. When the liquid begins to bubble, throw in the dry materials, and begin to beat and stir as fast as you can. When the cocoa and sugar are all dissolved, your beverage is ready.

*How to serve.* Have a dipper and the cups all ready. Remember, if you do not spill, there is nothing to clean up.

There are other ways of making cocoa. Try more than one. Some girl in the club may know another way, or your teacher may have another recipe. How shall you know which is best? It is the way that makes

[1] Hereafter, for convenience, simply *What, How much, Utensils, How to make,* and *How to serve,* will be used.

Courtesy of Miss Jennie Shields.

FIG. 17. — Cocoa is easy to prepare for the school luncheon.

the smoothest cocoa, with the fewest dishes, and with the least work.

The Dutch people, who manufacture cocoa, also make it well. They always beat it to make it smooth. If you can have a large "Dover" egg beater, a few minutes' beating, while the cocoa is still on the stove, makes it free from grains and lumps.

### EXERCISES AND PROBLEMS

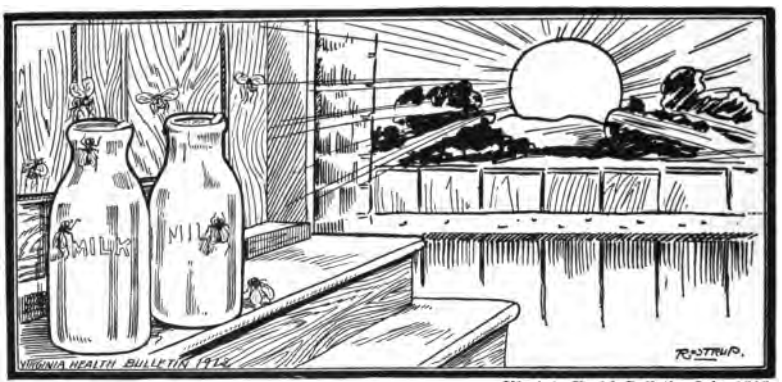
1. How many liquid teaspoonfuls make a tablespoonful?
2. How many dry?
3. How can you divide a dry spoonful in halves?
4. How many tablespoonfuls are there to a quarter cup? To a whole cup?
5. Copy your cocoa recipe in your notebook.
6. Begin a table of measures, and leave space for more.

## Lesson 4

### The Value of Milk as a Food

How can we use milk for the school lunches?

A glass of cool, clean milk is one of the best possible foods for luncheon at school. Sip milk very slowly; for, if you gulp it down, you may have indigestion. Carry




*Virginia Health Bulletin, July, 1912.*

Fig. 18. — Do not let milk stand in this way.

it to school in a clean bottle, and keep it in a cool place. Would you like a little change from plain milk, either at school or at home?

**Renneted milk, or junket.**

*What.* Milk, sugar, a flavoring, rennet tablets (bought at the grocer's). The flavoring may be vanilla, or nutmeg, or cocoa dissolved in the milk.

*How much.* 1 quart of milk
$\frac{1}{4}$ cup of sugar
1 teaspoonful vanilla
A few gratings nutmeg
1 tablet, usually

*Utensils.* Something for warming the milk; something to hold the milk; measuring implements.

*How to make.* Junket is a dish that needs no cooking. Warm the milk slightly on the stove, or set it in the sun in an open dish. Stir the sugar and flavoring into the milk. Dissolve the tablet in a little water, and stir it into the milk. Let the dish of milk stand in a warm place; and then cool it, when the milk becomes firm.

*How to serve.* Serve just as it is, in saucers, or with berries or fruit juices, or with cream and a little sugar.

**Why is junket digestible?** Do you know what the rennet is? It contains the same substance that helps to digest the milk in our bodies, as we usually take it. The junket is partly digested then, and agrees with some people who cannot take milk plain.

**Cheese from sour milk.**

*What.* A pan, or dish, of soured milk that is firm. Salt is enough to add, but a little butter or cream improves it.

*How much.* This cheese can be made without measurements, and salted to taste.

*Utensils.* The pan that holds the milk, a bowl, and a piece of clean cheesecloth.

*How to make.* Heat the milk until the whey separates, but not until the curd toughens. Put the cheesecloth into the bowl. Pour in the milk. Lift the cloth, let the whey run out, squeeze it a little; and then, if the curd in the cloth is not dry enough, tie the cloth together and hang by the string where the rest of the whey will drip. Later salt the curd, and add a little soft butter or cream.

*How to serve.* Serve the whey to the chickens. They will appreciate it. Make the curd into balls and cool. It is delicious with gingerbread for supper. You can take it to school

in a cup or jar. Try putting it into a sandwich with a little currant jelly spread on, too. That does sound odd, but see if you do not like it.

**Why is good milk, and clean milk so important?** We are quite right in Europe and in America in thinking that milk is a useful part of our diet; and even in Japan and China, where milk has not been used in the past, the people are beginning to take it as food.

**What is the value of milk?** In the first chapter we have seen how the growth, strength, and warmth of young animals show milk to contain substances that build the body and give energy. Indeed, it is a perfect food for the young and an excellent food for grown people. The grown-ups and you must remember that milk is true food to be taken instead of some other food, and not in place of water plus the other food. This is a very important fact, for some people add milk to a meal when they have eaten enough of other things; and then they say that milk does not agree with them. It should always be partaken of slowly.

Hot milk is a good thing sometimes, especially when one feels a little "faint" for food. Some forenoon when Mother looks tired, give her a cup of milk heated almost to the boiling point; add a tiny pinch of salt; and, if she does not like the taste, stir in a teaspoonful of fruit juice. It will make her feel rested, and will give her nourishment.

**What does milk contain?** This picture (Fig. 19) shows what is found in milk, when the chemist separates

the parts. You have seen the dairy separator remove the cream. The curd and the whey separate when milk sours or when rennet is used. The chemist can do more. He can take out the sugar, which gives the sweet taste,

*Courtesy of President Gulliver, Rockford College.*

FIG. 19. — Composition of milk. 1, whole milk; 2, water; 3, fat; 4, protein; 5, carbohydrate; 6, mineral matter or ash.

and the mineral matter, which gives iron, lime, and other things needed for body building and health.

**The word "Protein."** The curd of the milk has something in it that is found in somewhat the same form in meat, fish, and eggs; and also in nuts, old beans, and peas; and in grain seeds. It is a substance without which we starve, and which you might be satisfied to call "meat food." But why not learn its name, *protein?* You cannot understand just what protein is until you study chemistry; and then you will learn among other things that it contains *nitrogen*, a gas that is all around us in the air. We breathe it in with every breath, and out again. Nitrogen stays in our

bodies only when we take it in our food in this substance called protein. Marjorie Allen found the word in one of the Farmers' Bulletins about feeding animals. Ask you father about it, too. If you are studying a little agriculture in school, you are learning something about nitrogen in fertilizers; for plants must have it, as well as animals. Neither can live without it. The protein is both a body builder and a fuel food.

**Why is milk a substitute for more costly food?** When milk is compared with the other animal foods that contain protein, we begin to realize how very valuable it is. Does it astonish you to be told that a quart of milk equals in food value a pound of steak or eight eggs?

**Why must we have clean milk?** Milk must be very clean, for in any dirt there may be the germs of sickness. Even clean milk will sour in time. Souring means the presence of one kind of "germ" or bacteria, — invisible tiny living things that form the acid. These do not injure us, but other bacteria may be harmful. Typhoid fever, tuberculosis, and other serious illnesses are carried in milk, cream, and butter. "Clean milk" is the best advertisement for those who produce it to sell. Also, when one has milk for home use one must be careful for the health of the family.

**Begin with the cow.** The cow must be in good health, well fed, kept in a clean barn or stable; the milker must have clean hands and clean clothes; and the pails, cans, and bottles should be as clean as boiling water, soapsuds, and sunshine can make them. The

milk must be cooled as quickly as possible. In the most up-to-date dairy farms, the cow is washed and curried! This means much trouble and labor. People who buy milk must learn to pay enough for it, so that the farmer can keep the milk clean. "Since a quart of milk equals

*Courtesy of Walker-Gordon Laboratory Co.*

FIG. 20. — Notice how clean everything looks in this picture of milking time.

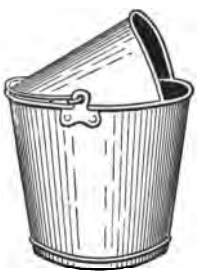
a pound of steak or eight eggs in food value, milk even at 15 to 20 cents a quart is more economical than meat and eggs at ordinary prices. At the usual price (city) of 8 to 10 cents a quart, milk is very economical." [1]

Some day we may all learn the lesson of cleanliness.

[1] See *Foods and Household Management.* Kinne-Cooley, Macmillan Co., page 150.

Then we shall not have the tragedy of many deaths in some city, even of little children, because of an impure milk supply.

**Milk in the home.** Milk must be kept cool and very clean in the house. This is where ice is a comfort and saves milk and work. You cannot have the pans for milk too clean. The vessel for holding milk, whatever it is, — pan, pail, pitcher, or bottle, — should be rinsed in cold water, washed in strong, clean soapsuds, rinsed in clean boiling water, and dried in a sunny place; or, in rainy weather, near the stove. The place where the milk stands must be clean and washed off daily.



*United States Department of Agriculture. Farmers' Bulletin, No. 51.*

FIG. 21. — A covered milk pail helps to keep dirt out of the milk.

If you have no ice on hot, muggy summer days, scald the milk when it is fresh, to keep it from souring. It is better to let the pans or other containers drain dry from the boiling water than to wipe them, even with the cleanest towel. Cool the milk as quickly as you can, and keep it as cool as possible. Mr. and Mrs. Allen believe milk to be so necessary to the health of the family that they have one cow whose milk is for family use. Every one in the country who can have even a small barn and pasture, should try to have a cow.

**What is the value of skimmed milk?** As only the fat has been removed, skimmed milk is useful for many purposes. We know that it is fed to farm animals.

Although we may not care to drink it, skim milk can be used in cooking, when some cheaper fat, like suet or "butterine," takes the place of the fat taken off in the cream.

**Is there any use for sour milk?** Clean milk, soured, forms a smooth curd, which some people like with sugar, for a dessert. It is very delicious in this way on a hot day, especially if a little fruit juice is taken with it. And what an easy dessert to prepare for dinner or supper! Another way to use sour milk, is to beat it thoroughly and drink it. Cheese is made from the sour milk. We shall learn later about using sour milk in cooking.

Why, then, is it important to use clean milk freely in our diet? Suppose you write down the answer, that you may be sure to have all the points.

### EXERCISES AND PROBLEMS

1. Why does milk take the place of meat or eggs at a meal, rather than of potatoes? What are the three fuel foods in milk?
2. Since 1 quart of milk equals eight eggs in food value, is milk or eggs the more economical food at the time you are studying this? How can you find out?
3. Why does cream cost more than milk?
4. If there is a dairy on your farm, find out how many quarts of milk make a pound of butter.
5. What are the substances left in the skimmed milk?
6. See if you can decide what is left in buttermilk. Has it any food value?
7. In what ways can we be sure that milk is kept clean?

## Lesson 5

### BREAD A STAPLE FOOD

**Bread is a staple food for the school luncheon and for all meals. If you cannot make it at school, make it at home and have a bread contest at school. How can we plan for this bread contest?**

One day in fall, when the Pleasant Valley Luncheon Club was eating sandwiches under the trees, one of the girls remarked: "Isn't it funny that our sandwiches look so different! I don't mean what is inside, but the bread itself. It is different colors, and the holes are different sizes, and some of the bread is crumbly and some is moist. Isn't it queer that bread isn't just the same always!"

"My mother didn't have luck with her bread this week," Marjorie Allen said. John Alden replied, "My father says, 'Don't talk about luck: that's a lazy man's excuse!'"

"Well," Marjorie began, her face flushing, — but Barbara Frietchie said quickly: "It's late for our county fair, but why can't we have a bread contest here? Everybody says it's an accomplishment to make good bread. Didn't you read about a contest last week in the 'Pleasant Valley News'?"

"Yes, indeed," they all said, "we'll ask Miss James!"

"A good idea," said the teacher, "and just the time, for we are beginning percentage, and this is where the boys can help."

But John Stark looked very determined. "If there

is going to be a bread contest, I am in it. My brother is a mining engineer, and last time he was at home, he learned how to make yeast bread, Mother's way. He said bread often is pretty poor, where he stays."

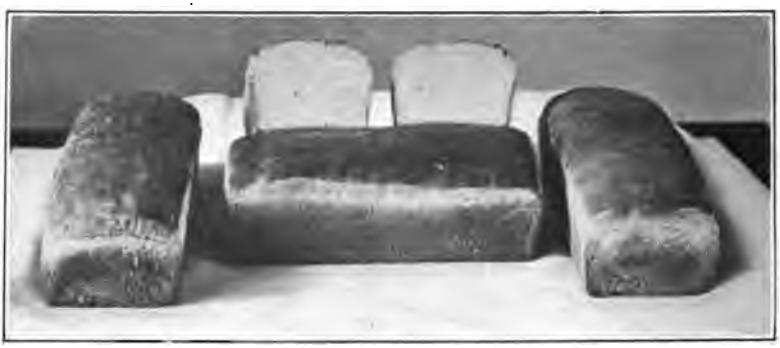
*Courtesy of Mrs. Hetty S. Browne.*

FIG. 22. — "Who says boys can't cook?"

This is the way the club planned their contests. Miss James thought it better to wait until the instructor in household economics came from the State College to talk to the Woman's Club and to visit the school.

When Miss James received a letter saying that Miss

Travers would be there on a certain date, each pupil who wished to engage in the contest made a loaf by the rule used at home, and brought it to school to be judged on the day of the visit. Miss Travers used a score put on the blackboard, and explained that, for an accurate contest, all the loaves should be made by one recipe. She gave a demonstration of her own rule,



*Courtesy of the Department of Foods and Cookery, Teachers College, Columbia University.*

FIG. 23. — A loaf of this shape and size bakes evenly.

making the bread from the materials that the club had supplied. She explained that hers was a good and exact recipe, though probably no better than many of those familiar to the mothers of Pleasant Valley. The mothers had been invited to the school; and many of them were present and enjoyed the demonstration and the lecture. They helped by asking practical questions.

**A bread score.** This is the Bread Score as Miss Travers explained it. Do you understand it?

BREAD SCORE CARD[1]

| | | |
|---|---|---|
| I. General Appearance | | 15 % |
| 1. Shape | 2.5 % | |
| 2. Size | 2.5 % | |
| 3. Crust | 10.0 % | |
| (*a*) Color | | |
| (*b*) Smoothness | | |
| II. Internal Appearance | | 55 % |
| 1. Depth of crust | 10 % | |
| 2. Texture (lightness) | 15 % | |
| 3. Crumb | 30 % | |
| (*a*) Moisture / Elasticity (25 %) | | |
| (*b*) Color (5 %) | | |
| III. Flavor | | 30 % |
| | | 100 % |

If you read it carefully you can see that all the points mentioned are important, and that the different per cents show the importance of the points when compared with each other.

**What are the points in good bread?** Notice the shape of the loaves in the picture (Fig. 23). A loaf of this shape and size bakes evenly. The crust should be a golden brown and tender rather than hard and tough. The color of the crumb — the inside of the loaf — should be creamy rather than snow white; the holes,

[1] Courtesy of Department of Foods and Cookery, Teachers College, Columbia University. See, also, Bulletin 25, University of Illinois.

small and evenly distributed; and when the crumb is pressed between the thumb and finger, it should be soft and springy, but not doughy. Some people like a rather open, dry bread, and others a closer and moister grain; but it must be baked through to the very center, in any case. And the flavor — who can describe exactly the sweet, almost nutty taste of good bread, free

*Courtesy of the Extension Department, Ohio State University.*

FIG. 24. — 1 has a poor shape and texture; 2, good shape and texture; 3 has a poor shape.

from a taint of yeast or sourness! We all enjoy it when it is perfect. It is indeed a science and an art to make it so.

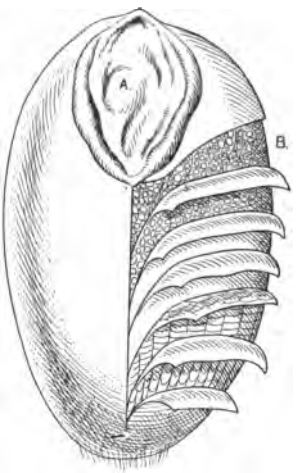
**What is the value of white bread as food?** Even before scientists explained to us the true value of bread, the human race had learned to prize bread made from ground wheat. Bread is called the "staff of life," as you know. Bread made from other grains is useful and palatable. In the pioneer days of America, "brown" bread was made largely from corn and rye

meal; and we enjoy this kind of bread even now. We may have whole wheat, or graham, or rye alone; but white flour bread is our main dependence.[1]

Hear what the scientists say.

**What does bread contain?** Bread made from white flour contains all the stuffs necessary in food.

If you should make a list of what the bread contains and compare this with a list that shows the different foodstuffs[2] found in milk, you would find them to be almost the same, but not occurring in the same amounts. The bread contains less mineral matter than milk, and therefore is not quite a perfect food. It has but little water, and a large quantity of something that is not found in the milk; that is, starch. Curiously enough starch and sugar are very much alike; and Mother Nature, who is a wonderful chemist, can change one into the other. Indeed, you may have learned from lessons in physiology or hygiene that when we eat starch it is changed to sugar by the digestive juices before it is absorbed and carried about by the blood. The protein is found in the gluten, which you




*Courtesy of Washburn Crosby Co.*

FIG. 25. — A dissected grain of wheat.

[1] See *Foods and Household Management.* Kinne-Cooley, Chap. XII.

[2] See page 294.

can easily obtain by tying some flour in a cloth, and washing out the starch.

**Why are so many foodstuffs found in wheat?** Is it not interesting that in the grain of wheat the same kinds of materials are stored to feed the baby plant that nature supplies in milk for the young animal, the little plant drinking water from the soil? There is so much of this food in the grain, that it is worth while for man to use it himself as food.

**Why is bread a cheap food?** The scientists tell us, too, that for ten cents' worth of bread we can have more body-building material and energy than from ten cents' worth of any other kind of food, even of cheese, beef, eggs, milk, potatoes.[1] When Miss Travers asked the question at the beginning of this paragraph, Pleasant Valley pupils answered it, after a few minutes' discussion. See if you can answer at least in part. You can buy a heavier weight either of milk at 9 cents per quart or of potatoes at 60 cents a bushel; but the milk gives less energy, and the potatoes less building material, than the bread.

**Should we ever buy baker's bread?** One of the mothers present asked Miss Travers if it is economical to buy bread. Her answer was: "It depends upon what you are trying to save. In the summer it saves heat in the kitchen, and your time and strength. The bread costs a little more per loaf than when it is made at home."

[1] U. S. Department of Agriculture. Farmers' Bulletin 487.

Some one also asked if it were "just as good" as homemade, and Miss Travers replied: "That depends upon the baker, and the bakery laws of the state. It should be good, because the baker has an oven that is better than that in the home stove, but he does not

*Courtesy of the New York State College of Agriculture at Cornell University.*

FIG. 26. — Pans for baking bread, cake, and pastry, of tin, iron, and enameled ware.

always use good material, and work in a clean place. We must all work together to see that bakery laws are made and enforced, for it is said that about fifty per cent of the bread used in this country comes from the bakery. But there is nothing in the world better than the best home bread. And do you not think every girl should learn to make it?" Everybody said, "Yes," to this question; and the pupils went home, anxious to have a proper bread contest as soon as possible. One pleasant fact about such a contest is that it is possible for all to

win, since you compete with a standard for bread, and not with each other.

EXERCISES AND PROBLEMS

1. Make a list of the foodstuffs contained in bread; that is, starch, sugar, etc.

2. Explain why bread costs less than milk.

3. Separate the gluten from the rest of the flour, as explained in the text, knead and stretch it.

4. Can you tell what winter wheat is? spring wheat? the difference between them?

## Lesson 6

### MAKING BREAD

How shall we make bread for the contest?

**What kind of flour shall we buy?** In order to make the bread contest exact and fair to all, the loaves should be made from the same kind of flour. Different brands of flour make different kinds of bread, the quality of the flour depending upon the variety of wheat and upon the method of manufacture. Modern flour mills produce an excellent flour.[1]

A good bread flour is creamy in color, feels grainy to the touch, and contains a large amount of gluten. Spring wheat grown in the northwestern part of United States has more gluten and less starch than winter wheat living in the ground through the winter farther south, and makes a good flour for yeast bread. Some people

[1] *Foods and Household Management.* Kinne-Cooley, Chapter XII.

who are judges of flour, like a mixture of spring and winter wheat flour for bread.

**Why is yeast put into bread?** Something is needed to make the bread light and porous; yeast is used for this purpose. This is a fact already known to you. People have used yeast for many years in making bread, but it was not until the microscope gave us eyes to see small

*Buchanan's Household Bacteriology.*

FIG. 27. — One form of yeast seen through a powerful microscope.

things, that we could learn what yeast really is and how it works. If you should look at yeast through a powerful microscope, you would see something like this picture (Fig. 27). Even then you would need to be told that this tiny object has life, and that it is a tiny one-celled plant. As new cells develop in the bread, one budding out from another, a gas is formed. This gas, as it expands, makes the bread "rise," as we say. The gas is of the same kind that we breathe out from our lungs; its name is carbon dioxide. Alcohol is also formed. Both the gas and the alcohol pass off in the baking.

**What does the yeast need to form new cells?** If you stop a moment to recall what all plant life needs for growth, you can decide what these tiny cells want, too, — food, warmth, moisture. The yeast cells find food in the flour and moisture in the liquid mixed with the flour. We must give them warmth.

Now you understand why, in winter time, the bread dough is put in a warm place. The yeast cell is not killed by moderate cold, but, like the trees, it does not bud when it is cold. And the reason why soft, or compressed, yeast cake, and liquid yeast are kept cool, is that the yeast cells may not bud and increase, until we want them to do so. The tiny yeast is like what we usually call a plant in another way. During a drought when everything has turned brown and looks dead, you have seen grass grow green in a few hours after the welcome rain falls again. Thus, will the yeast cell remain dry for a length of time, to bud and increase when moisture is supplied. Does not this explain the dry yeast cake, in which thousands of the tiny cells are mixed with meal, dried and kept ready for use?

**Where does yeast come from?** The story of the yeast is a very pretty one, and might be used as the subject of a composition in school. If all the liquid yeast and beer, which always contains yeast, should be thrown away, and all the compressed and dried yeast cakes burned, would the yeast cells be lost to us, and could we have no more yeast bread? No, indeed! We

could begin all over again, and set a trap to catch the "wild" yeast cells that are present in the air, clinging to fruit and other things, and growing wherever they have a chance. What would the trap be like? Your mother may have caught the cells already; for when canned fruit or preserves "work," the busy little yeast cell is there, finding just what it needs to make it comfortable,—and it thrives on sugar in small quantities. Have you ever heard of "salt rising" bread, made without adding yeast? Here again the wild yeast was in the flour probably, ready to develop in the dough. It is more convenient, though, to cultivate the cells and to keep them ready to use whenever we wish.

Perhaps your mother keeps liquid yeast on hand. Dry yeast cakes and compressed yeast are useful and convenient, however, and save the trouble of making the liquid yeast.

**What else do we put in bread?** We use a liquid,—either water or milk, or some of both,—and salt. We sometimes add a little sugar, and some form of fat,—butter or "butterine" or lard,—which makes the bread and crust less tough. Some people dislike the taste of lard in bread. Those who like a moist bread, add a mealy mashed potato.

Dried currants, or raisins, and nut meats make a pleasant variety in bread, especially when it is made of graham flour. Part of the bread dough can have extra fat and sugar put into it, with a little spice and dried fruit, to be baked in biscuit or rolls.

**A simple rule for white bread.**

*What.* The materials have already been given.

*How much.* 1 part of liquid to 3 of flour, or 1 cup of liquid to 3 of flour, for a loaf. The quantity of liquid varies because flour differs. You have to learn by practice. Make the liquid half water and half milk. The milk should be scalded. Why? 1 teaspoonful of salt to a loaf.

The quantity of yeast varies. The more yeast, the shorter time for rising. $\frac{1}{8}$ yeast cake is enough to a loaf, if the bread is mixed overnight; $\frac{1}{4}$ cake, if mixed in the morning. 1 or 2 teaspoonfuls of sugar to a loaf, — if sugar is used. 1 or 2 teaspoonfuls of shortening, or fat, to a loaf.

*Utensils.* Make your own list of utensils.

*How to make.* The thing to be most careful about in mixing the bread, is the warmth of all the materials. The yeast does its best work for us at about 70°–80° F. (Can you read a thermometer?) This is the temperature of a warm summer day. In cold weather, all the materials, even the flour, should stand in a warm place before the mixing.

*a.* Stir together the yeast, liquid, and sugar when used. Dissolve the yeast in a little water, first.

*b.* Add $\frac{1}{2}$ the flour, and beat very hard. Cover and set in a warm place.

*c.* When the soft dough is full of holes, like a sponge, add the salt, shortening, and the rest of the flour.

*d.* Then turn the dough upon a floured board, and knead until it is smooth and springy; or mix it in a bread machine (Fig. 28). Kneading means folding over, pressing down, and turning the dough with a rocking motion. Somebody should show you how.

*e.* There is a choice of what to do next. (1) If you wish a very fine-grained bread, put the dough into a greased bowl, wet the top with milk, cover, set away until it rises to twice its first size, knead again, and put into pans to rise again; *or*

(2) This is quite fine enough for everyday eating, and saves strength and time. After one kneading only, shape the bread into loaves, just large enough to half fill each pan, brush over with milk, and then go on as with (1); only when light, the loaves are in the pans ready for baking. If the bubbles in the loaves are large, prick them gently. Why?

*Baking.* The baking of bread is an art.

It needs a steady oven, not too hot. Test it by a piece of paper that should turn a golden brown in 15 minutes. Some day, when we all have oven thermometers, we shall be baking our bread at 380° F.

A loaf made of 3 cups of flour, the shape of those in the picture, should bake about three quarters of an hour. It is better to overbake than to underbake.

The story of bread is not finished yet. Take the loaves from the pan to cool them. When cool all the way through, put the bread into a clean stone jar or tin box. Cover with clean paper. Some people use cloth, but paper is nicer.

**More about serving bread.** Do not cut the loaf for twelve hours. Bread has a better texture and is more digestible then. Can you cut even slices? It takes practice. Sometimes, when dainty sandwiches are wanted, cut the slices very thin.

**What are some of the ways to use bread?** Mollie Stark has a section of her cook book for bread recipes, with pictures of pretty loaves and rolls; and she says that she may decide to have a "Bread Book."

There is not room in this chapter for all the uses of bread; but Mollie has recipes for biscuits, rolls, dry toast, milk toast, zwieback, French egg toast, scalloped

dishes, desserts, and so on. Her motto is, "Bread is too good to throw away."

**Why use a bread machine?** Why not! Why use a sewing machine, or a mowing machine, or a cultivator instead of a hoe?

*Courtesy of Landers, Frary and Clark.*

FIG. 28. — An inexpensive bread mixer, cover on and off.

Mollie Stark and Marjorie Allen have a plan for surprising their mothers with presents of bread machines as soon as they themselves can save the money. And they have a plan, too, for earning some money by making bread and rolls to sell. Marjorie's mother has a friend who would be glad to buy bread, but she says that she soon tires of baker's bread. She asked Marjorie if she would be willing to make the bread for her. Of course, Marjorie and Barbara expect to become experts, and to make perfect bread.

*Courtesy of Department of Foods and Cookery, Teachers College, Columbia University.*

FIG. 29. — In her "Bread Book" Mollie Stark has pictures of pretty rolls.

### EXERCISES AND PROBLEMS

1. Should you pour boiling water on a yeast cake to dissolve it? Why, or why not?

2. Why should the bread box be scalded out often?

3. Calculate the cost of a loaf of bread made with three cups of flour.

4. What must you count in, if you want to compare the cost of a home loaf with a baker's loaf?

5. Can you read a thermometer? Look in the dictionary to see if there is more than one kind, and what the difference is.

6. Why can you knead a dough of white flour and stretch it, although corn meal dough falls apart? If you think you do not know, go back to the lesson before this.

7. Was Marjorie Allen correct when she said that her mother hadn't "luck" with her bread? What should she have said?

8. Can you find out why dough sours sometimes?

9. What are the most important points to remember in making bread?

10. If your bread is light and the oven is not ready, what will you do with the dough?

11. Explain why you can put a yeastcake into the ice box without injuring it?

## LESSON 7

### DISHES FOR A SCHOOL LUNCHEON

WHAT else may we have for the school luncheon? What is the difference between luncheon and other meals?

The Pleasant Valley Luncheon Club found it necessary to have a small committee each week to make plans for the luncheons for the coming week, in order that the pupils might know what each one should bring. The committees did not have disagreeable disputes,

although they did not always quite agree. The club soon learned that not all the members could have the food they liked best at every luncheon, and that it was not good sense to be what John Alden called "too fussy."

One day, when John Stark asked for plum pudding, and his sister, Mollie Stark, told him that he could not have it because plum pudding is not a luncheon dish, he said, "Why not? What is luncheon? Some of us call it dinner, anyway." And what is luncheon, or breakfast, or dinner; and what is a meal? These questions seemed to be conundrums, although the girls and boys had eaten meals all their lives. So they looked up the words in the new, big dictionary. They became so much interested that they wanted to learn the words for meals in other languages, and they found that different nations have very different habits in regard to their food.

In our own country, we usually have three meals, — breakfast, dinner, and supper, or tea, — or breakfast, luncheon, and dinner.

**What is a meal?** One dictionary says that a meal is "the supply of food taken at one time for the relief of hunger," and tells us that in the very old days of England, the Anglo-Saxon days, the word was spelled "mæl," meaning a *fixed time*. That is very interesting; for not only is it important to the person preparing the meal to have people prompt, but it is very necessary to us all to eat at regular hours, — babies, little children, and grown people, too.

Breakfast, dinner, luncheon, supper, all are meals. How do they differ?

You have heard of light and heavy meals, have you not? When Marjorie Allen told her father that Miss Travers said in one of her lectures that bread and milk and baked apples would be good for a farmer at noon of a hot day, he laughed, and replied that he had rather have a good square meal. What did he mean? Something like this? Well-cooked corn beef, pickles, potatoes, sweet corn, string beans, pie, cake, coffee or tea? Is that a light or a heavy meal? What name belongs to such a meal?

If the Pleasant Valley School ate a meal like that at recess, would Miss James find her pupils wide-awake and quick at arithmetic? Who was right about the plum pudding, Mollie or John Stark? Is it not true that you already know something about meals; and that a "light" meal is one where less food is served, and where the food is more easily, or more quickly, digested? Luncheon is a rather "light" meal; "a slight repast," says the dictionary. If you have not already done so, look in your dictionary to find the rest of the story about the words *lunch* and *luncheon*. The other meals we will talk about as we learn about preparing them.

A luncheon, then, is a meal rather small in quantity, and, in the case of the school lunch, consisting of foods that can be carried easily, and readily prepared.

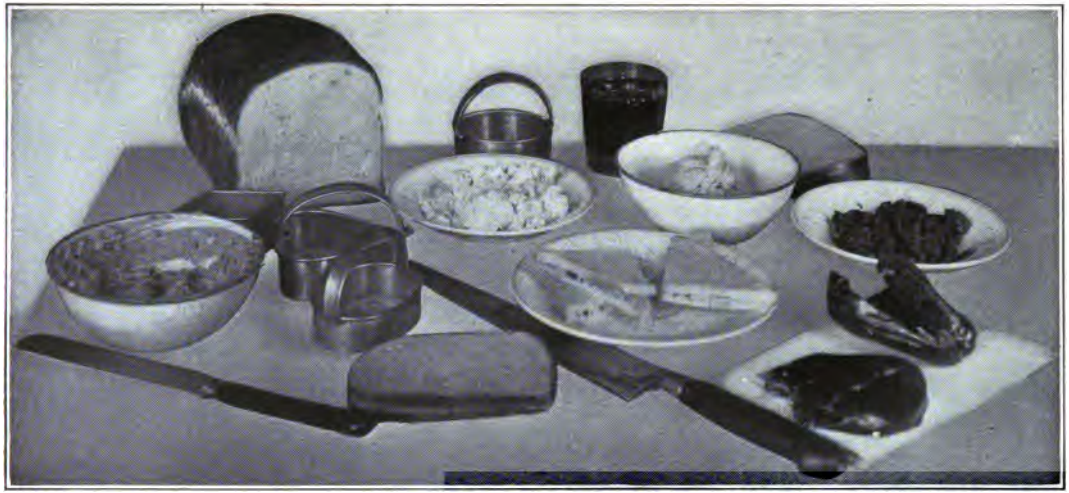
What may we add to our list of bread, milk, fruit and perhaps vegetables, cocoa or a cool fruit drink?

**What can we put into sandwiches?** We have already spoken of bread for sandwiches, which must be cut of even thickness and, for the school luncheon, must have the crusts left on. When the crusts are cut off for "fancy" sandwiches, they should be saved for a scalloped dish of some kind. Brown bread may be used as well as white.

The question at the beginning of this page can be answered by saying, "Almost anything eatable." The bread should be evenly buttered, and the material used, neatly put in; and, if the sandwich is not to be very dry by lunch time, it should be wrapped in paper. If you are serving sandwiches at a fair or entertainment, put a damp napkin over them.

**What does sandwich mean?** "Sandwich" is another word with a story. An Englishman, an Earl of Sandwich (Sandwich being the name of a place or town), who did not want to stop to eat, used to have slices of bread with ham between, taken to him — a convenient way of having a simple meal. If you butter bread, put in it a bit of crisp lettuce or water cress, add slices of hard-boiled egg or cheese, or a bit of cold meat, and another piece of buttered bread, you have a little meal, have you not?

**How can we prepare meat for sandwiches?** You do not need meat for luncheon at school; but, if it is more convenient sometimes for Mother to give you that than anything else, a little will do no harm.



*Courtesy of Department of Foods and Cookery, Teachers College, Columbia University.*

FIG. 30. — Everything is ready for making sandwiches. Notice the soft butter in the bowl at the right. There is a plate of plain cheese, and a bowl of cheese mixed with chopped nuts and chopped peppers.

The meat should be sliced thin, or chopped and moistened a little, that it may be spread nicely on the bread.

**Eggs for the school luncheon?** Some people think hard-boiled eggs indigestible; but they are really not so. An egg cooked hard takes somewhat longer to digest; and, if we swallow it almost whole, it may not be good for us. Nevertheless a hard-boiled egg is a convenient and useful food. Sliced or chopped and seasoned pleasantly, we must chew egg if it is in a sandwich. This is a good way to take it. The egg should cook in boiling water a half hour at least. Cut it fine, moisten with a little milk, salt it, put it between the bread — and you have a very palatable sandwich.

**Nuts for luncheon.** We often think of nuts as something to be eaten "for fun," as somebody says, forgetting that the squirrel can thrive upon them. The squirrel is certainly a most lively and energetic little person, sometimes getting the nuts before you do. Yes, the nuts that you love to gather in the crisp autumn weather are a good food for you, provided you chew them as well as Squirrel does. Eat them with plain bread and butter at lunch time; or chop them, mix them with a little sour-milk cheese, and make them into sandwiches. You could not ask for a better meal.

We will plan for other luncheon dishes as we talk about other meals.

EXERCISES AND PROBLEMS

1. Explain why bread, milk, and apples make a nutritious luncheon.

2. Look up the words: meal, breakfast, luncheon, dinner, supper, tea; and write the definitions in your cook book.

3. Make a list of food materials that can be used in sandwiches.

4. See if you can reason out what foodstuffs an egg contains. Do you know why an egg colors a silver spoon?

5. What are some of the foodstuffs that nuts must contain?

## LESSON 8

### A PICNIC LUNCHEON

WHAT new can we have for a picnic luncheon?

The Luncheon Club asked Miss James if she would not go with them some pleasant Saturday for a picnic on the shores of a beautiful pond at the head of Pleasant Valley.

This sheet of water had been stocked with fish by the farmers of the valley, who sent for advice to the Bureau of Fisheries at Washington. The members of the Farmers' Club have permission to fish at certain times of the year. They were very glad to allow the Luncheon Club to go fishing on a holiday morning.

The other food for luncheon was arranged for, just as the club planned it on school days. The different members of the club carried different foods; and all together they had enough bread and butter, sandwiches, and cookies for every one present. The boys caught

the fish while Miss James and the girls were building the fire and preparing to make the cocoa in a kettle hung over the fire. Two or three pans had been loaned for frying the fish, and you may be sure that the boys and girls had a merry time cleaning and cooking the fish, and eating the luncheon. They sang their club

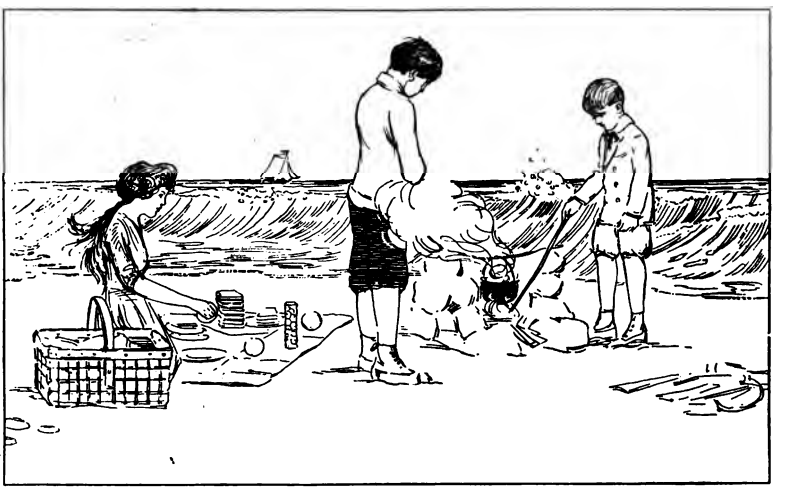


FIG. 31. — The Luncheon Club at the shore.

songs, told stories, and gathered wild flowers to carry home. There were very few dishes to wash because they used wooden plates for the fish. All the papers that were left were neatly buried, because the young people ate their luncheon on the spot where other people might go, and they remembered that nothing is so disagreeable as to see dirty papers and scraps of food lying about.

One of the girls said, "May we have a lesson at school on cooking fish, for there are so many ways that it can be done?" The next time that the cooking class met on their regular day they studied the fish question.

*Courtesy of the Department of Foods and Cookery, Teachers College.*

FIG. 32. — A dish of scalloped fish. See page 85. Notice how neatly the cloth is wrapped around the dish in which the fish is cooked.

Here are a few recipes. We cannot always have fresh fish, and should learn to use fish salted and canned.

**Creamed codfish.**

Soak the salted fish in cold water. Pull it apart with knife and fork. Put it in a saucepan of cold water, allow the water to heat slowly, and stop the heating just before the water reaches the boiling point. Pour off the water, shake the saucepan over the fire, add a thin butter sauce, and reheat. Serve on toast, if you wish.

**Baked fish.**

Almost any medium-sized fish is suitable for baking.

Clean the fish, seeing that all scales are removed. Stuff and sew. Shape with skewers to form a letter S and place upright on a baking pan or lay the fish on its side. If the

fish is not fatty, put strips of salt pork over it, and in the pan, or cut gashes in the fish and lay strips of pork in them. Dredge with flour. Bake one hour for a three-pound fish, pouring the fat in the pan over it, once in a while. Serve with butter sauce or plain.

The stuffing can be made of bread crumbs moistened slightly with water and seasoned with salt and a teaspoonful of dried herbs. It is not necessary, however, to use it.

Another way of baking a fish is to put slices cut from a large fish, in a greased pan, covering the fish with milk and letting it bake slowly for about half an hour, or until the flesh loosens from the bones. Cover the fish during the first half of the cooking, and then remove the cover and sprinkle the fish with crumbs. If the fish is baked in an earthen dish, serve it in the same dish.

**Canned oysters creamed.**

Open the can and wash off the oysters in a colander or strainer. Make a thin butter sauce, seasoning with celery salt or celery leaves. When the sauce is done, heat the oysters in it for a minute, and serve on toast.

**Canned salmon creamed.**

Open the can, pick over the salmon, being careful to remove the bones. Let it air for an hour or so and serve in a hot sauce as you would the oysters.

**Butter sauce.**

*What and how much.*

| | |
|---|---|
| Milk, cold | 1 cup |
| Water, hot | 1 cup |
| Butter or beef fat | 2 tablespoonfuls |
| Flour | 2 tablespoonfuls |
| Pepper | $\frac{1}{8}$ teaspoonful |
| Salt | $\frac{1}{8}$ teaspoonful |

*How to make.* Melt the butter in a saucepan; let it bubble but not burn; add the flour, salt and pepper; mix well; add *all* of the milk cold; and stir steadily until the mixture thickens. Pour in the hot water slowly, stirring all the time. To keep sauce hot, cover and set it over hot water.

All sauces may be made in the same way, with other liquids to take the place of milk,—tomato juice, for instance. Onions, if used, should be cut fine and browned in part of the butter before the flour is added.

**Fish and clam chowder.**

This can be made with fresh clams or canned clams, fresh fish or salt fish. If the salt fish is used, it should be soaked before it is put into the chowder.

*What and how much.*

| | |
|---|---|
| Clams or fish in pieces | 1 quart |
| Potatoes | 4 cups, cut in thick slices |
| Onion | 1 chopped |
| Salt | 1 tablespoonful |
| Pepper | $\frac{1}{8}$ teaspoonful |
| Butter or pork | 4 tablespoonfuls |
| Milk | 6 cups, scalded |
| Soda crackers | |

*How to make.* If clams are used, clean and pick them over, cut off the hard part, chop, and strain the clam liquor. Or if you are using fish, cut it into pieces. Try out a little pork in a large kettle and fry the onion in it. If it is a clam chowder, cook the potatoes first and drain. Then put into the kettle layers of clams, potatoes, and crackers; add the milk and butter; cook for three minutes; and add the clam liquor hot. If it is a fish chowder, put the potatoes in raw with the fish and cook the chowder half an hour. With pork, omit butter.

The Luncheon Club made this chowder at school one day in the fall on a fire built out of doors, for the smell of fish in the

schoolroom is not very pleasant. Of course, the canned salmon could be used for a luncheon dish at school, as it is already cooked.

**What is the value of fish as food?** Fish is one of the meat substitutes. People who live on the coast can make it their chief animal food. It costs somewhat less than meat, at least in some places. When we can, we should use it at least two or three times a week for one meal or another. It is just about as digestible as meat, although some of the oily fish, like herring, mackerel, salmon, and shad, are a little more difficult of digestion than cod or haddock. We must not think of fish as a "brain food." Some people used to say that it was good for the brain because it contained phosphorus, but fish has no more phosphorus than some other food, and the brain has no more need of phosphorus than have other parts of our body.

**Having fish fresh.** Fish spoils very easily. If we live far away from the seacoast, unless we happen to be near ponds or rivers, it is better for us to use canned or smoked fish than fish that has been kept a long time. It can be carried on ice, however, for a long distance. If you buy fish from a cart that comes to your neighborhood, notice that the flesh is firm and the eyes bright. Fish always has a disagreeable odor; but, if it is spoiled at all, the smell is very unpleasant.

**Cooking fish.** The flakes of fish fall apart very easily because the connective tissue softens more easily than the tissues of meat. When you boil fish it is best

to wrap it in a cloth so that it may not break and it is a good idea to bake it in the dish in which it will be served.

### EXERCISES AND PROBLEMS

1. As fish is a meat substitute, what important foodstuffs must it contain?

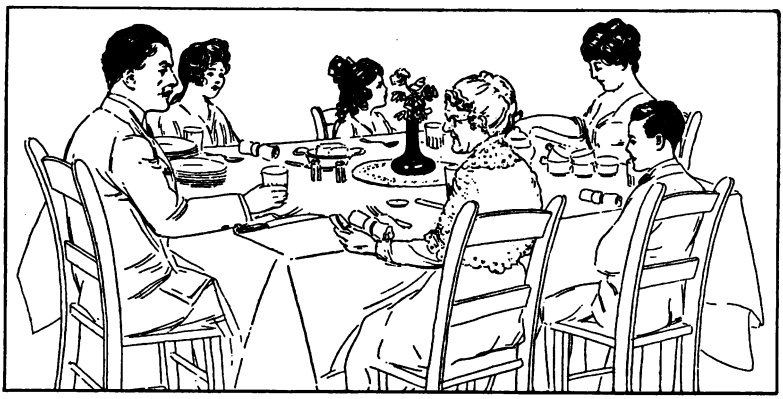
2. If there are fish in your neighborhood, make a list of the seasons when they are caught. If you are not near the coast, perhaps your teacher can help you to find this in some cook book.

3. Make a list of the different dishes in which fish could be used as a substitute for meat.

### REVIEW

1. What ideas have you for cooking a lunch at school?
2. Is it worth while to have fruit juices in the diet?
3. How may fruit juices be prepared for the school luncheon?
4. Is there any reason for drinking water freely many times a day?
5. It is very important that water be kept pure. Can you tell how water may be kept pure?
6. Is there any reason why one should be very careful about the source of his water supply?
7. What general directions can you give about cooking?
8. There are several ways to prepare cocoa. Can you suggest one?
9. Tell how to prepare two simple dishes from milk.
10. What valuable food substance does milk contain?
11. Do you know why the foodstuff we call protein is so important?
12. How may milk be kept pure and clean?
13. What are the points in good bread?
14. Name the foodstuffs bread contains.

15. Compare bread with other staple foods as to value and cost.
16. What is yeast? Can you tell why yeast is used in bread?
17. Give complete directions for making white bread.
18. Just what is a meal?
19. What are some ways for using eggs in the school luncheon?
20. You gathered nuts last fall. Think of ways to use them in the school luncheon.
21. Why is fish valuable as a food?
22. How can one know whether the fish one buys is fresh?
23. Give one good fish recipe that could be used in a luncheon prepared at school.



# CHAPTER III

## THE HOME SUPPER

### Lesson 9

#### PREPARING SUPPER

How may we help in preparing supper?

Supper is one of the pleasantest meals of the day, because the hardest work is over for all, and there seems to be more time for the family to chat pleasantly, without a feeling of hurry. In summer the supper comes at the coolest hour, and in the winter there is a feeling of comfort in the warmth of the fire and the brightness of the lighted lamps.

If a girl has not learned to prepare a meal, supper is a practical one for her to begin with; it will give her mother a little leisure at the end of a busy day, and the girl herself is back from school, and glad to do something to help. Miss James, the teacher of the Pleasant Valley

School, gives credit for home work, as a part of the household arts work; but this should not be needed to make an energetic girl ready for the task. Marjorie Allen, Mollie Stark, and the other girls were discussing music at one of their club meetings, for they have a chorus in Pleasant Valley; and they all agreed that the time to play or practice upon the piano or organ is not while Mother is getting a meal or washing dishes. What do you think about it? After you have helped with the work, then in the quiet of the evening, when all the grown people can listen and join in the music, is not that a better time?

**Setting the table.** This is a pretty piece of work for the little ones before they learn to cook. Marjorie Allen makes a play of the table setting for the younger sisters and brothers. They have a table-setting song, and march back and forth in time to the music. Cannot some one of you make a rhyme for this occasion?

**The dining table.** The table may be standing in the kitchen or the living room, or, if the house is large, there may be a separate dining room; but this is not necessary, and, while it is very pleasant in many ways, it does make more steps. One of the houses in Pleasant Valley has a large old-fashioned kitchen across the back of the house with the cooking conveniences at one end, and at the other, a place for the dining table. Near the table is a corner cupboard that holds enough dishes for the table. That end of the room is cool because there are two doors. The oldest daughter has made a screen

from a clotheshorse covered with a pretty chintz-patterned calico; and, when the meal is ready, she stands the screen where it cuts off the heat of the stove. There could not be a pleasanter place for a meal, when

*Courtesy of Whitcomb and Barrows.*

FIG. 33. — An easy way to set an attractive table.

Father comes in from work, and Mother is glad to rest a minute.

In the Allen family, the father and brothers have a knack for carpentering. When farm work was slack,

they added a piazza to the house outside the kitchen, screened it in; and they have all their meals there in warm and pleasant weather. A shelf on each side the window ledge makes it easy to pass things through from the kitchen. Several other families in Pleasant Valley followed this fashion. (Fig. 75.)

**What shall we have to cover the table?** The table itself is probably an extension table with a smooth top.

FIG. 34. — A table laid with doilies. The napkin should be at the left.

A dull finish is better than a polished top, because it does not become spotted or scratched so easily.

For a cover, have you ever tried white table oilcloth in the summer? It looks cool, can be washed off quickly at the end of each meal, and saves laundry work in hot weather. Why should a large tablecloth be used in summer or, indeed, in winter? Miss Travers, from the State College, advised the members of the Woman's Club to give them up and instead to use doilies or strips

of cloth or larger cloths that just cover the table. Some of the members, of course, did not want to give up their linen in the shape of large tablecloths; but, after all, is not the simplest often the most beautiful as well as the most labor saving?

Here is a picture (Fig. 35) of a table simply laid with

*Courtesy of the Bureau of Publications, Teachers College, Columbia University.*

FIG. 35. — A table laid with strips of blue and white Japanese toweling.

strips placed across in such a way that they lie under each place. These happen to be made of Japanese toweling, with blue or brown figures, that costs only ten cents a yard, and is easy to wash; but strips of plain

toweling are pretty used in the same way, — a rather fine " crash," for instance. Or you may use squares of cloth with a simple edge, called doilies.[1] These can be made in sewing lessons at school, or for extra home

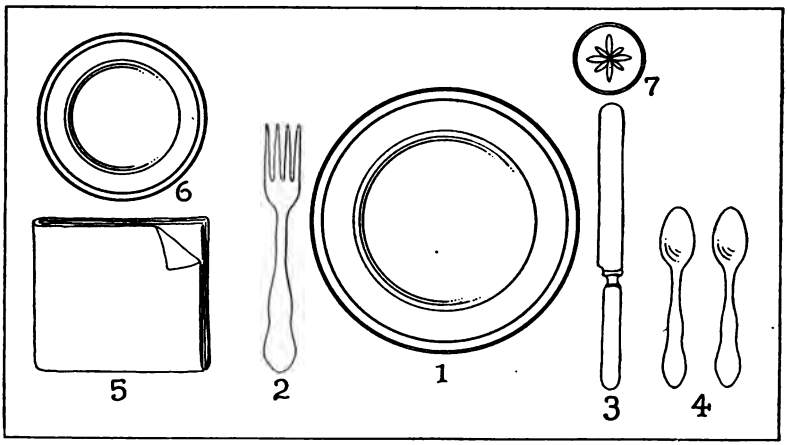



FIG. 36. — A plan for laying one place. 1, plate; 2, fork; 3, knife; 4, spoons; 5, napkin; 6, bread and butter plate; 7, glass for water.

work. Paper napkins in the summer are a great convenience; and why not for all the year? If cloth napkins must be used, have small ones.

**Laying the table.** To have everything clean and fresh is the first important thing; next, to have plates, spoons, and forks laid straight. The drawing (Fig. 36) shows a simple way of laying a place. The napkins should be placed at the left. Stand salt and pepper shakers where they are easily reached, and have mats,

[1] D'Oyley was the name of a merchant in England in the eighteenth century.

straw or crocheted, where the hot dishes are to stand, with a tablespoon ready for helping the food. Always know what food is to be put on the table, and plan dishes accordingly. In cold weather, at least, heat the plates and dishes.

Busy people sometimes leave a few of the articles on the table from meal to meal. If you do this, it is necessary to cover the table to keep off a stray fly; and you should be careful that all crumbs are brushed off before the cover is put over. It is neater to clear off the table after every meal.

**How can we help at the table?** When we wait on ourselves, this should be done pleasantly and all should take a share, each person helping to serve one or more dishes. The Allen children take turns as waiter in removing the soiled dishes and the food, and in putting on the dessert. A quick way is to place a tray on a small stand near the table, taking the dishes from one place at a time and sorting them on the tray as you go. The tray can then be carried into the kitchen, with the dishes ready for washing.

One mother uses a plan for having everybody help at breakfast time, by serving himself on a tray.

The breakfast is kept hot on the stove. On the kitchen table are all the dishes needed and a small tray, one for each of the family of four. Even the little boy sets his own tray, helps himself to food, and takes his place at the table. When the meal is ended, each one carries out his own dishes. This plan might not

work with a large family, and some people would not like it.

Mollie Stark's older brother made a turntable on a pivot in the center of the table and standing above it. All the dishes of food were placed on this, and each one helped himself. The table has to be round to make this device convenient.

**What patterns shall we choose for the table china?** We cannot all see beauty in the same kind of thing. Some of us enjoy bright colors and gay patterns. Some things are in good taste in certain places and not in others, however. Although large figures and striking colors may attract our attention when we are buying chinaware, we may become very tired of the design when we see it every day. It is wiser to buy dishes with a simple pattern and quiet color. A narrow border of gold or of gold and green is pretty; and one does not grow tired of such a simple pattern. Notice the two designs on the china in the picture (Fig. 38) and also on the platters in the pictures of cooked food throughout this volume. Of course, if you are fortunate in having some old pieces of china or earthenware that belonged to your grandmother, perhaps, you will prize them and take good care of them; and they make interesting ornaments for the kitchen or dining-room shelf.

If you are not quite happy without gay dishes, then select a good pattern in some pitcher, or plate, or single dish, to be used once in a while. Do you know that a

pretty thing interests us more if we do not see it all the time? The Japanese, who have a strong artistic sense, have only a few beautiful objects out at one time, changing one for another to refresh the eyes. In the picture (Fig. 37) you find two pitchers, good in shape and easy

*"Selection of Household Equipment." Year Book. Department of Agriculture, 1914.*

FIG. 37. — Two pitchers, good in shape and easy to wash.

to wash. The larger is an old-time pattern in blue. The other picture (Fig. 38) shows a pretty teapot of an antique pattern, but it is so hard to clean that it would better be kept as an ornament. We need to think of other points in our china, in addition to its beauty, you see.

**Flowers on the table.** In a busy household and with a large family, perhaps we cannot always have flowers

on the table; but when the first rose opens, or some other flower is beginning to bloom, put it in a vase in the middle of the table, and see if it is not enjoyed.

**Setting the table for company.** Of course, the table should be neat and pretty for the home people, but we

"Selection of Household Equipment." Year Book. Department of Agriculture, 1914.

FIG. 38. — A pretty teapot of antique pattern, but so hard to clean that it better be kept as an ornament.

all like to honor our guests and to show them that we are glad to have them with us. Some of the prettiest dishes may be used that we do not always place on the table; and this is a time for a few flowers arranged in the center of the table.

Some people think it necessary to serve their company with several kinds of cake, and preserves; and one wonders sometimes if their friends may not have indi-

gestion from overeating. It is in better taste, and kinder, to have only one of each kind of food, each dish well cooked and daintily served; otherwise, the table may look as if it held a food exhibit instead of a meal. "Gold" and "silver" cake look pretty together on a plate, and are not too much to serve; but one layer cake is enough for any meal.

**What shall we say about table manners?** One day after the Girls' Club had given a luncheon to their

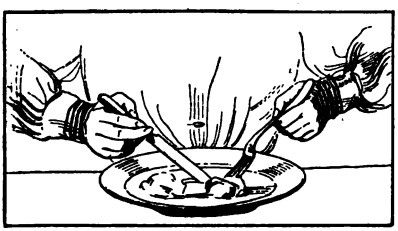
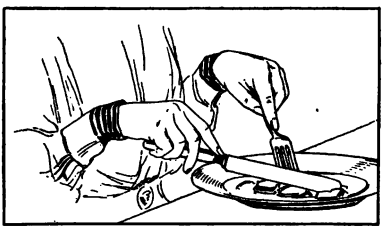


FIG. 39. — Incorrect position for holding knife and fork.



Correct position for holding knife and fork.

friends in the Ellen H. Richards house, Barbara Oakes said: "It seems to me that it is just as important to know how to use the forks and knives and spoons as it is to lay them straight on the table. Did you notice how differently people use their forks and spoons? I wonder if Miss James would talk it over with us." Their teacher was glad to do so, and she made several helpful suggestions. Miss James said that the use of silver and dishes at the table varies in different countries and at different periods. For instance, in old times in America it was considered quite proper to pour

the tea out into the saucer and to drink from that; and knives were made with round ends because the knife was once used for carrying food to the mouth. But there are certain principles of good manners that we all can remember. Eating slowly, drinking either a hot or cold beverage when the mouth is empty, chewing food with the mouth closed and without making a noise, and, of course, not dropping food, are all details that we should learn; because otherwise we make ourselves disagreeable to other people. It is considered better to take soup from the side of the spoon than from the end. Sometimes people are worried as to whether they should hold the fork in the left or the right hand. Which hand to use really is not a matter of great importance, provided the fork is managed nicely. The English custom is to hold the fork in the left hand, lifting it to the mouth; the French are inclined to hold the fork in the right hand, using it somewhat as one would a spoon. The important thing is to use the fork quietly and naturally and without spilling food. When we are invited to a formal luncheon or dinner, where there is quite an array of silver, we, of course, like to do as other people. The soup spoon we can easily know because it

FIG. 40. — The fork is in the right hand ready to carry food to the mouth.

is larger. Some people have a small fork with one broad tine for fish. Fish is usually supposed to be eaten with a fork as it does not need cutting. If there are two or three knives, the smallest is probably for the bread and butter, and the largest for cutting meat. If there are two forks, one smaller and one larger, the smaller is probably for the salad and the larger for the meat dish. It is not worth while to be nervous and uncomfortable simply because the way of laying silver is not quite familiar. It is usually the custom to arrange silver at a formal affair in such a way that the outer pieces are used first. If you eat quietly and slowly, making as quiet motions as possible, your manners will be acceptable.

**Talking at the table.** There is one thing that does more at the meal than the table setting, and almost more than the good food. Do you know what it is? If you happen to be feeling what you call "out of sorts," make yourself tell an amusing story, and see what a flavor it adds to the supper.

EXERCISES AND PROBLEMS

1. Discuss together different ways of setting and waiting on the table.
2. Make a list of dishes needed for a family of six or eight.
3. Send for some price list of dishes, and calculate the cost.
4. Make a simple plan for waiting on your home table.
5. Make suggestions for covering the table for breakfast, for a simple and a formal luncheon, and for a family dinner and a dinner when there are guests.
6. Make a drawing of one place laid for dinner.

## Lesson 10

### Dishes suitable for supper

**What shall we have for supper?**

As supper comes late in the day, we want, when we can, to choose those foods that will need little cooking; and thus we make as little work as possible. We have to remember, too, the time of year, for in summer we may not want a hot dish; whereas in winter, a warm supper is just what we need.

**A simple supper.** If we are thinking only of the needs of the body, a supper of bread and milk, with some cooked fruit or berries, is all that is required in warm weather. People who are satisfied with this, are very sensible and fortunate. But what shall we give to those who want something else?

There will be bread and butter, of course; something sweet in the way of simple cake or gingerbread or cookies; fruit, either berries or cooked canned fruit; cocoa or tea. Do we want meat or a substitute for it? Is there some cheese in the house? There is a cheese toast that will make a hot dish to take the place of meat. It can be cooked in a frying pan on top of an oil stove. This dish can be added to the list of foods prepared at school.

**Cheese toast.**

*What.* Skim milk, slices of stale bread ½ inch thick, salt, an egg, cheese, cut thin or grated.

*How much.* Enough slices for the family.

*Utensils.* A flat dish, a frying pan, a bread knife or griddle-cake turner.

*How to make.* Beat the egg in the dish, add the milk and salt. Lay in one or two slices of bread at a time until the slice is moist all through, but not soft.

Have the frying pan hot and greased a little. Lay in as many of the slices as the pan will hold. Brown the slices on one side and turn to brown on the other. Sprinkle grated cheese on the top, or lay on thin slices. When the lower side is browned and the cheese melted, the toast is ready to serve.

**Another way.**

Omit the cheese, and serve the toast with a little jelly on the top, or with maple or brown sugar sprinkled on.

Both of these are good in winter, as well as in summer.

**How shall we serve meat for supper?** Some people think that they must have meat for supper. The question of meat is found in another lesson farther on. If somebody *must* have it, then we will prepare it well, of course.

If a solid piece of meat is left from dinner, slice it cold, and serve with a little mustard or pickle.

If there is gravy left, chop the meat, and warm it in the gravy, but do not cook it long enough to make the meat hard. Make it savory by adding a little tomato, a bit of onion, or celery leaves, and serve it on bread or toast.

**What is scalloped meat?** This word "scalloped" is used for those cooked dishes where there are layers of two different food materials, first one and then the other, — some starchy material already cooked, like

bread crumbs, or boiled rice, or potato, with meat or fish or eggs or fruit. The name scalloped was given at first to a food that was heated in a large scallop shell with crumbs on top. Although we now use a dish in place of the shell most commonly, we keep the name.[1]

**How shall we make a scalloped dish?**

This is not the kind of dish where exact measures are needed. You need enough material to fill a baking dish large enough for your family. Use what you have on hand. Suppose you find in the pantry some pieces of cold meat, — perhaps of more than one kind, stale bread, stewed tomato, canned or fresh. Make as follows:

*a.* Grease a baking dish.

*b.* Cut the meat in small pieces or chop or grind it.

*c.* Crumb the bread.

*d.* Put a layer of crumbs in the bottom of the dish, then a layer of meat, and a layer of tomato. Sprinkle on a little salt. Put in another layer of bread and so on until the dish is full, having the crumbs on top. Moisten the top layer of crumbs with tomato juice or water, and put on it a few bits of butter, or a little suet, or beef fat tried out.

*e.* Heat and brown in the oven.

The dish can be made without tomato. Then water or gravy will be needed to moisten it.

**Meat with rice or potato.**

If there is cold boiled rice or cold mashed potato on hand, use either in place of the bread. Or, if the cold potatoes are whole, slice the potatoes, chop the meat, and make every other layer of those. A bit of some vegetable, onion, carrot, or tur-

[1] If you ever visit a part of the coast where the large scallop shells wash up on the beach, collect a set of several, and use them for warming up meat or fish with crumbs on top, one for each person.

nip can be mixed with the meat; or use fish, oysters or clams, or hard-boiled eggs sliced, in place of the meat. As this kind of dish needs an oven, it is perhaps better for that reason in winter than in summer, unless for some cool day when there is a fire, — or if there is an oven to the oil stove.

**Some other supper dishes.** The main dish for supper that has meat in it, or something to take the place of meat, can be a warmed-over dish, you see.

The baked-bean loaf is a very good substitute for meat.

*Courtesy of the New York State College of Agriculture at Cornell University.*

FIG. 41. — Baked-bean loaf.

**Baked-bean loaf.**

*What and how much.*

1 pint cold baked beans
1 egg, beaten
1 cupful bread crumbs
Salt and pepper
1 tablespoonful finely minced onion
2 tablespoonfuls tomato catsup

*How to make.* Combine the ingredients, and shape the mixture into a loaf. Bake it for twenty-five minutes. Serve with strips of broiled bacon on the top.

With baked beans, one likes Boston brown bread.

**Boston brown bread.**

*What and how much.*

| | |
|---|---|
| Corn meal | 1½ cup |
| Rye or Graham | 2 cups |
| Salt | 1 teaspoonful |
| Soda | 1 teaspoonful |
| Molasses | 1 cup |
| Thick sour milk | 2 cups |
| Butter (melted) | 2 tablespoonfuls |

*How to make.* Mix in the order given, stirring the molasses and milk together first. Put the mixture in a greased pail, cover tightly, and put the pail in a kettle of water to boil 3 to 5 hours.

In winter, a stew of clams or oysters made with milk is a comfortable or, as some one has said, a "comforting" dish. These are not found fresh near Pleasant Valley, but canned oysters or clams are safe if they are put up in a good cannery.

Marjorie Allen tried making a milk or cream vegetable soup one cold winter evening, and the family enjoyed it thoroughly. (See page 231.)

We seem, in selecting the main supper dish, to be searching for something that satisfies the appetite, is nutritious, and does not make much work at supper time.

EXERCISES AND PROBLEMS

1. Explain why the cheese toast takes the place of meat.
2. Why is it just as well to use skim as whole milk in this dish?
3. Make out several plans for summer suppers and winter suppers.
4. Make a list of other dishes that are good for supper.

## LESSON 11

### OTHER SUPPER DISHES

A SALAD is a palatable supper dish. What is the best way to make tea?

Marjorie Allen often makes a potato salad, one of her father's favorite dishes, and varies it by using other cold vegetables and adding cold meat or fowl.

What is a salad? The word "salad" is supposed to be derived from the Latin "sal," salt. We use the term for a dish that gives relish to a meal by the crispness of fresh lettuce, celery, a shredded cabbage, or some other green vegetable. These may be combined with cold cooked vegetables, meat, fish, shellfish, fresh fruit, or nuts, and served with a dressing. Lettuce eaten with lemon juice or vinegar and sugar is a simple old-fashioned salad. Some people enjoy the lettuce dressed with olive oil, vinegar, salt, and pepper. A cooked dressing made with butter or cream is relished by those who do not like the flavor of olive oil.

Green vegetables should be freshened in cold water, dried by shaking in a towel, and cooled. Cooked vegetables and meats should be cut in small pieces, and chilled. Fruit should be kept on ice and prepared just before serving.

**Potato salad.**

*What and how much.*

| | |
|---|---|
| Potato cubes | 1 pint |
| Minced parsley | 1 tablespoonful |
| Chopped onion | ½ teaspoonful |
| Salt | |
| Pepper | |
| Dressing to moisten | |

*Courtesy of Department of Foods and Cookery, Teachers College, Columbia University.*

FIG. 42. — Potato salad.

For variety add one of the following to the potatoes:

| | |
|---|---|
| Minced ham | ¼ cup |
| Nuts, cut fine | ½ cup |
| Cucumbers, sliced or cubed | ½ cup |
| Celery, in ½ in. lengths | 1 cup |

**Boiled dressing.**

*What and how much.*

| | |
|---|---|
| Eggs | 2 |
| Mustard | ½ teaspoonful |
| Salt | ½ teaspoonful |
| Sugar | ½ teaspoonful |

| | |
|---|---|
| Vinegar or lemon juice | 3 teaspoonfuls |
| Hot water | ½ cup |
| Butter | 1 tablespoonful |
| A few grains of cayenne | |

*How to make.* Mix the dry materials and beat with the eggs until light. Add the vinegar and water and cook in a double boiler, stirring constantly until thick and smooth. Remove from the fire, stir in the butter, and set away to cool.

*Courtesy of Department of Foods and Cookery, Teachers College, Columbia University.*

FIG. 43. — Tomato jelly salad.

**Tomato jelly salad.**

*What and how much.*

| | |
|---|---|
| Tomato pulp (cooked and strained) | 2 cups |
| Water | 2 tablespoonfuls |
| Gelatin | 1½ tablespoonfuls |
| Salt, pepper, and sugar to taste. | |

For method of making, see recipe for gelatin on page 237. Serve with boiled or cream dressing.

**Whipped cream dressing.**

*What and how much.*

| | |
|---|---|
| Thick cream, sweet or sour | ½ cup |
| Vinegar | 2 tablespoonfuls or less |
| Salt | ¼ tablespoonful |
| Sugar | ¼ tablespoonful |
| White pepper | |

*How to make.* Beat cream stiff with Dover beater; add salt, sugar, pepper, and vinegar very slowly, still beating. Serve with fresh cabbage and garnish the salad with slices of green pepper. This dressing may be used with any other salad.

**How to make tea.** There are very few families who do not require tea. We need to learn to make it well, although only the grown people should drink it.

Is it not curious that among the thousands of plants in the world, the human race has found only a few to use for making a beverage? Tea has been used in China for hundreds of years; and the tea plant grows well there, and in Japan, India, and Ceylon. You may have heard of one plantation in South Carolina where very good flavored tea is grown; but the climate and soil of these other countries seem best to suit the tea plant. The leaves are gathered, dried, and rolled. The color and flavor of the tea depend upon the age of the leaf and the way in which it is dried, as well as upon the soil and climate.

Your family has some particular liking for some one kind of tea,—Oolong, a Chinese tea, Japan tea, Ceylon, or India, these latter having several "fancy" names.

Perhaps you use a " mixed " tea, which means a mixture of green and black tea, probably Chinese varieties.

**What does tea contain?** All these teas contain " theine," which is the substance that acts upon the nerves, making some people feel comfortable, bright, and talkative, and keeping others awake. But it is another substance in tea, tannin or tannic acid, which is bad for the digestion. The longer tea stands, especially if it boils, the more of this substance is taken out by the water. Miss James told the class that when one sees the teapot on the back of the stove all day, and somebody drinking tea from the pot, then somewhere in the house one will find a bottle of medicine for indigestion! It is better, too, to take tea at a meal when there is little or no meat. When Agnes Groves repeated this at home, her aunt, who was a great tea drinker and liked strong tea thoroughly boiled, said that she would like to have Agnes prepare tea correctly. The doctor had told her that she drank it too often and too strong. So Agnes made the tea for supper that night, explaining that if the water is poured on when it is boiling, and is allowed to stand upon the leaves only a few minutes, the flavor is drawn out, but much less of the tannin. Never boil the tea leaves in the water.

**Making tea.**

*How much.* 1 teaspoonful tea for each person, and 1 for the pot; and about 1 cup of water to each teaspoonful of tea.

*Utensils.* An earthen pot, measuring cup, teaspoon, strainer. Sometimes a tea ball or piece of cheesecloth.

*How to make.* Measure the water and bring it to the boiling point. Heat the tea slightly in the pot, pour on the water rapidly, allow to stand three to five minutes, strain into a heated pot for serving. If there is an astringent flavor, the tea has stood too long.

Where tea is to be served in very large quantities, this method is convenient: Make a small quantity of very strong tea, pour it off the leaves, and add boiling water when it is served.

### EXERCISES AND PROBLEMS

1. What is the most important thing to remember in making tea?
2. Why should young people avoid tea drinking?
3. Make a list of materials that can be put into a salad.
4. Study a cook book for other salad recipes.
5. Make a recipe for using sour-milk cheese in a salad. How could you make this a very pretty dish? Can you "guess" why Marjorie Allen calls this "bird's egg salad"?

## LESSON 12

### THE CANNING OF FRUIT AND VEGETABLES

WE may have fresh fruit and berries and sometimes vegetables for supper in summer and autumn; but in winter and spring we depend upon canned and dried foods. What preserving can a girl do at home and at school?

An old-fashioned economy is storing away food when it is plenty for time of need. We have read of the early days in our own country, when the first settlers dried corn, apples, berries, salted codfish, smoked or salted beef, and made fruit preserves and pickles. Some of

*Courtesy of Mrs. Jane S. McKimmon, State Agent for Canning Clubs, North Carolina.*

FIG. 44. — Canning club girls at work.

you may have seen the old " smokehouse," or perhaps some one has pointed out to you the hooks in the beams of some old kitchen where food was hung to dry. You are fortunate if the smokehouse is still in use on your home farm.

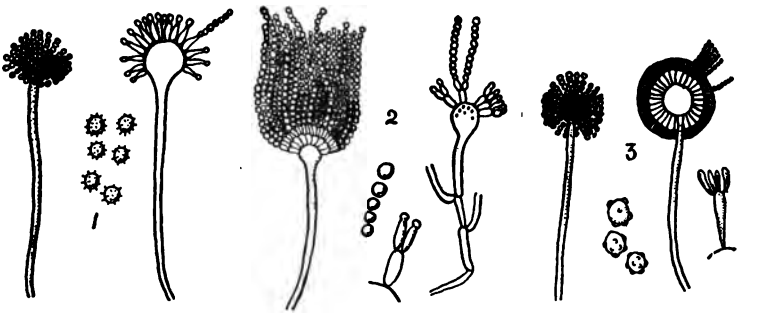
Nowadays we have many conveniences for canning and preserving; and our canneries all through the United States preserve many kinds of food in tins and glass. This industry still has a place in the home; and, as there are many fruits and vegetables to be preserved in the autumn, some of the first cooking lessons at the Pleasant Valley School were canning lessons.

**A word about canning clubs.** Mollie Stark had read in the local paper an account of a girls' canning club, and asked Miss Travers how such a club could be formed. You yourself can find out all about it in the pamphlets mentioned on page 296.

In the meantime, if it is not best to have a club in your own neighborhood, you all want to know how to preserve food for home use. And any businesslike girl can earn a little money by selling her products near home, if she will take the trouble.

**Why does food spoil?** Have you ever wondered why so many kinds of food spoil so easily, except a few that are dry like flour and meal and cereals; and even these sometimes have insects in them, or become musty? Recall what you have seen: the mold on fruit and on preserves or jelly; the " working " of canned fruit which we have already learned is caused by the presence of

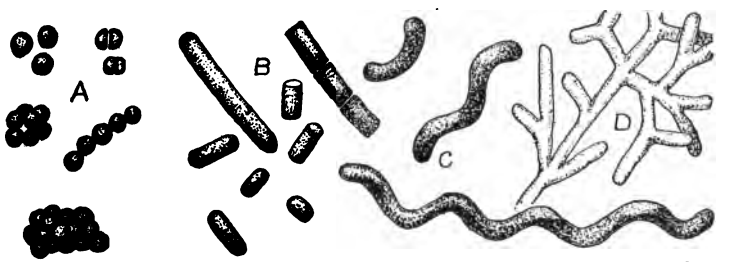
yeast. Not only do the molds and yeast cause the spoiling, but so do the still tinier organisms known as




*Buchanan's Household Bacteriology.*

FIG. 45. — Three species of mold as seen under a powerful microscope.

bacteria. Do not allow these pictures (Figs. 45 and 46) to deceive you. One of these cells may be only $\frac{1}{25000}$ of an inch in length, and some of the larger $\frac{1}{6000}$.




*Buchanan's Household Bacteriology.*

FIG. 46. — The four types of bacterial cells as seen under a powerful microscope. *A*, cocci; *B*, bacilli; *C*, spirilla; *D*, branched filamentous organism.

It is beyond our power to imagine them. How wonderful it is that we can actually see them through a microscope. Sometimes one, sometimes all three together, —

molds, yeast, and bacteria, — make all our trouble. How curious it is that because of them we have canneries and spend so much time and money in fighting them away from our food!

How do we fight them? By killing them and by keeping them out of the food. How do we kill them?

*Courtesy of Department of Foods and Cookery, Teachers College, Columbia University.*

FIG. 47. — Pint jars as well as quart jars, and jars with large mouths, are convenient for canning.

By boiling at temperature 100° Centigrade, or 212° Fahrenheit. And how do we keep them out? By sealing cans, by covering glasses, and in another way. Why is it that dried, and salted, and smoked, and sugared food, like candied fruit and vinegar pickles, keep? The tiny cells cannot live without moisture, and that accounts for drying as one way of preserving; and

they cannot live where the substances just named are found, and, therefore, we put these materials into the food. Perhaps you can think of some other materials in addition to these. Sometimes chemicals are used to preserve food, but when any proves harmful, this will be controlled by pure food laws.

While the yeast cell flourishes in sugar, a large amount prevents its growth. The action of yeast is called fermentation. While alcohol and vinegar result from fermentation, they both, when strong enough, prevent the growth of the tiny living cells that cause fermentation and decay.

**Preserving fruits.** Notice the picture (Fig. 47) of jars and glasses for home use. Jars with large mouths are convenient, for large fruit or ears of corn can easily be put in and taken out. It is a good plan to use some pint jars, unless the family can eat a quart of stewed fruit at one meal.

*Apparatus.*

Scales
Quart measure
A preserving kettle of good enamel ware
Plated knives
Large spoon of enamel or wood
Tablespoon and table fork
Pint and quart cans with glass tops fastened by springs
New rubber rings
Jelly glasses with covers
Cloth jelly bag
Stick on which to hang the bag

Large bowl
Boiler, in which to stand the cans
A funnel
A dipper
Old towels, or cheap cloths
Saucer and spoon for testing

*Courtesy of New York State College of Agriculture at Cornell University.*

FIG. 48. — A steam cooker may be a part of the canning apparatus.

*Directions for work.*

Thoroughly wash all the utensils just before using. Sterilize the cans and glasses by placing them in a large kettle or boiler on the stove, covering them with cold water, and allowing the water to reach the boiling point and to boil for half an hour. Covers and rubber rings should be treated in the same way.

Prepare the fruit by careful washing, picking over, paring, and cutting.

The skins may be loosened on peaches and tomatoes by pouring hot water over them.

Weigh both fruit and sugar, or measure if no scales are available.

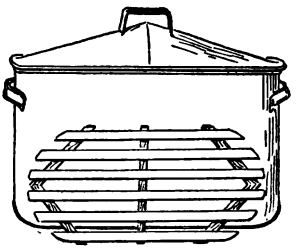
See that the cooking apparatus is in good order, that the proper heat may be continued.

Avoid rapid boiling of the fruit.

Place the cans, when they are to be filled with hot fruit, upon a towel wet in very hot water or in a pan holding an inch or so of hot water. Never hold the can or glass in the hand.

Use a dipper for putting cooked fruit into the can. A funnel is useful placed in the mouth of the jar.

Put whole fruit and halves compactly in the jar, using tablespoon and fork, or two tablespoons. It requires practice to do this well.



*Courtesy of New York State College of Agriculture at Cornell University.*

FIG. 49. — A sterilizer with a rack may be used for sterilizing cans and glasses.

See that all air bubbles are removed, and fill the cans to overflowing, before putting on the glass tops and fastening on the spring. Wipe off the jars

*Courtesy of New York State College of Agriculture at Cornell University.*

FIG. 50. — Spring top jar. Position of spring during cooking. Position of spring after cooking.

carefully, and stand them on their tops for a day in order to test the tightness of the rubbers and the fastening.

After filling jelly glasses, set them at one side, and cover them all with a piece of cheesecloth until the jelly becomes firm. Then pour melted paraffin upon the jelly in each glass, and when the paraffin is cooled, put the covers on firmly.

Label the jars with the name of the fruit and the date.

**Canning.**

*Method* 1. (Material cooked before it is put into the can.) This is a good method for berries, and for fruit that will be served as a sauce. Proceed in the preparation and finishing according to the general directions. Cook the fruit gently for half an hour. Use as little water as possible. No sugar *is required* in the canning process, but the flavor is better if a small amount is used in the beginning — a half cup of sugar to a pound of fruit is enough.

*Courtesy of New York State College of Agriculture at Cornell University.*

FIG. 51. — Testing the tightness of the rubbers and the fastenings, after the jars have been filled and have stood on their tops for a day.

*Method* 2. (Material cooked in the can.) This is the better method for whole fruit and halves. Select firm, well-shaped fruit for this method, rejecting the mellow and soft fruit. Pack the cans tightly with the fruit, and pour in hot water with sugar dissolved in it, a half cup to the quart can. More sugar can be used, if so desired. Set the jars in a boiler on a rack, and surround them with warm water, to a height that will not allow the water to boil into the cans.

Set the cover on each jar, but do not fasten them. Cover the boiler closely, bring the water to a boil, and allow it to boil for an hour. At the end of this time, with a fork test the fruit for tenderness; pour in more sirup if it is necessary. Remove the jars when the water has cooled sufficiently, and adjust the covers. Cold water is sometimes used at the beginning, but this makes the process longer.

Apparatus is constructed for this method of canning, but the ordinary boiler answers the purpose.

**Preserving.**

(A good method for peaches, apricots, and quinces.) Select firm and handsome fruit and prepare it carefully. Allow a pound of sugar to a pound of fruit. (What is the measure of a pound of sugar?) Place enough water in the kettle to cover the fruit, dissolve the sugar in the water, put the fruit into the kettle, and cook very gently until the fruit becomes a clear color. Rapid boiling spoils the shape of the fruit. Do not stir at all, but skim off any scum that rises to the top. When the fruit is done, put it with great care into the jars. If the sirup is thin, boil it down for a short time, and then fill the jar. Close the jar as in canning.

**Making jam and fruit butter.**

This is economical and very easy. It is nothing more than a fruit sauce, with a larger amount of sugar than usual to preserve it.

Soft and somewhat imperfect fruit may be used. For jam proper allow a pint of sugar to a pound of fruit. Cook the fruit with enough water to prevent its sticking to the kettle, using as little as possible.

Mash the fruit by stirring it once in a while as it cooks. When the fruit is soft, add the sugar, stir thoroughly, and cook gently for about five minutes. Test by cooling a spoonful on a saucer. The jam should thicken slightly. When ready, pour it into jelly glasses, or somewhat larger earthen jars — "jam pots." Seal, as directed for jelly.

The *fruit butter* is even more like fruit sauce than is the jam, for it is softer than jam and contains less sugar. A cup or only a half cup of sugar to the pound of fruit is enough. Proceed exactly as in jam making.

*Apple butter* may be flavored with spices and with ginger root and lemon juice. Quinces or a slice of pineapple may be cooked with the apples.

**Jelly making.**

Fruit contains a substance known as pectin, one of the carbohydrates, that jellies the fruit juice when the water in the juice is partially evaporated. Sugar helps in jellying, but no amount of sugar will set the jelly if there is no pectin. Some fruits have more than others, and also more when not overripe. Currants and firm apples are good jelly makers, and can be mixed with other fruits that do not jelly well. Mellow summer apples do not set well, but crab apples do. Some one is experimenting with the use of the white layer of orange peel cooked with the fruit to help the setting of the jelly, and it seems to be working well. (See recipes on page 302.)

There is another step in this process, the straining out of the juice from the pulp. For this, prepare a jelly bag from firm cotton cloth which has been boiled and washed. This bag must be hung in such a way that the juice drops from the point of the bag into a bowl below. It may be hung upon a stick between two chairs, or upon the rod of a strong towel rack over a table.

1. *Apple jelly.* Select tart, red-skinned apples, cut them in small pieces with the skins on, retain the cores, and put them in a kettle with cold water barely to cover. When thoroughly cooked and mashed, put this pulp into the jelly bag, and allow the juice to drip as long as it will. Do not squeeze the bag, nor stir the pulp, if you wish clear jelly. This dripping process is a matter of hours, and in the home kitchen may continue all night. Allow a pint of sugar or less to a pint of juice. Return the juice to the kettle, and allow it to simmer for twenty-five minutes or half an hour, skimming when necessary. In the meantime, heat the sugar, being careful not to melt or burn it. Stir the sugar gently into the juice, and boil five minutes. Test a little upon a saucer. It should show signs of jellying as it cools. Boil longer, if necessary. Finish as directed. Jelly often does not set until twenty-four hours have elapsed.

2. *Currant jelly.* The method is the same as with apple jelly. It is not necessary to remove the currants from the stem. Heat just long enough before the straining to make the juices flow well. It seems odd that white currants should make a red jelly.[1]

Very agreeable flavors are secured by the combining of two or more fruits in a jelly,—quince and pineapple with apple,—a leaf of rose geranium or lemon verbena in a glass of apple jelly,—raspberry with currant. White apple jelly may be flavored with mint leaves, and used in place of mint sauce with meat.

3. *Blueberry jelly.* Mention should be made of blueberry jelly—certainly not a common jelly. Examination of the blueberry shows a pulp rich in pectin. Although the juice is fairly sweet to taste, yet it is sufficiently acid to yield jelly of good firmness even when the proportion of sugar to juice is 1 : 1. With this proportion of sugar, the total time of making the jelly need not exceed 10 minutes.

The blueberry as a jelly fruit seems quite equal to the currant, with this difference in the jellies: although each is delicious, currant jelly is tart to the taste, while blueberry jelly is sweet. Hence, they may be used for different purposes in the menu.

**Pickling.**

Pickles are not desirable in the diet. If acid is craved, it is much wiser to secure it from fresh fruits and from lemon juice.

If a relish is wanted, here is a simple one:

**Chili sauce.**

*What and how much.*

| | |
|---|---|
| Tomatoes | 12, medium-sized and ripe |
| Green pepper | 1, finely chopped |
| Vinegar | 2 cups |

[1] Adapted from *Principles of Jelly Making*, Cornell Reading Course, N. E. Goldwaithe.

| | |
|---|---|
| Sugar | 3 tablespoonfuls |
| Salt | 1 tablespoonful |
| Clove | 2 teaspoonfuls |
| Cinnamon | 2 teaspoonfuls |
| Allspice | 2 teaspoonfuls |
| Nutmeg | 2 teaspoonfuls |

*How to make.* Peel tomatoes and slice into a preserving kettle. Add other ingredients and heat to the boiling point. Cook slowly two and one half hours. Pour into preserve jars and seal.

**Tomato catsup.**

Select only ripe tomatoes for catsup, wash but do not peel, cut out green cores and bad places, quarter, measure, and place in open-top, porcelain-lined or agate vessel over stove. For every gallon of tomatoes add 1 level cup of finely chopped onion. Boil until both tomato and onion are soft. Strain juice and pulp through a coarse wire sieve, mashing through all the pulp possible. Measure this strained pulp and juice, and proceed as in the following recipe:

2 gallons strained mixture tomatoes and onions
2½ level teaspoonfuls ground cloves
3 level teaspoonfuls ground ginger
2 level teaspoonfuls ground red pepper
3 level teaspoonfuls ground cinnamon
2 level tablespoonfuls ground allspice
1 level tablespoonful ground black pepper
1½ level cups (½ pint cups) sugar
¾ level cup (½ pint cups) salt
1 quart vinegar

Place strained tomatoes in agate vessel; add spices, sugar, and salt; boil until thick; then add hot vinegar slowly and let boil 30 minutes before beginning to bottle mixture.

Use clear, flint, 10-ounce grape-juice bottle. Wash well with soda and place in vessel of hot water until you are ready to use. It is best to put wooden slats in the bottom of vessel; place the bottles filled with water thereon; and let come to a boil, thus steril.zing. Pour out water. Fill hot bottles with boiling catsup; cork tightly.

The measures for all recipes must be taken level. Scrape off spoons with a knife, patting and scraping until measure is level. These have been taken accurately, and you should get good results if directions are followed.

A good catsup can be made in winter by using five cans of club tomatoes, 1 cup of chopped onions, and half the quantity of all other ingredients mentioned in the above recipe.[1]

**Why should we dry fruit and vegetables?** This is an old-time method, and still a good one. It is easy; a little can be done at a time; the dried food keeps well in a dry place, and has a good flavor.

Dry pitted cherries on a plate, near the fire or in the oven when the fire is going out. Do berries in this way, too.

Sliced apples can be dried in the sun, covered with netting or wire screening to keep out flies.

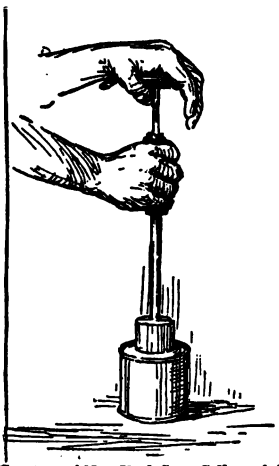
Many people do not know that dried sweet corn is quite as good as or better than canned corn. Cut off the kernels from the cob and dry, while the sweet corn is quite tender. In the winter make "succotash," the Indian name for "corn and beans," or "beans and corn."

**More about the canning clubs.** Here are some

[1] Courtesy of Mrs. Jane S. McKimmon, State Agent in Home Demonstration Work, North Carolina.

recipes for canning vegetables, used in the club work. Vegetables need longer cooking than fruit; and it is a good plan to cook them for two or three days in succession, two or three hours at a time.

The picture (Fig. 44) shows a large canner that is used out of doors. Even if there is no canning club in a



*Courtesy of New York State College of Agriculture at Cornell University.*

FIG. 52. — A tin can may be capped with round capping steel.

*Courtesy of New York State College of Agriculture at Cornell University.*

FIG. 53. — A tin can may also be tipped with soldering iron and solder.

town, such a canner is very convenient when preserving for a large family, and it soon pays for the first cost.

Some one asked Miss Travers whether it paid to can. Would it not be better to buy canned goods? Her answer was that where there is a plenty of fruit and vegetables on the place, it costs less money to can. When you have learned how, the labor is not too great.

**Canning vegetables.**[1]

To can string beans select beans that are young and tender, and have few strings. The Green Pod Stringless is a good variety. The trade likes a green bean about the size of a rat tail. Indeed, canners sometimes designate them as rat-tail beans. And if you pull it when it is young and tender enough and remove every vestige of string, there is no doubt of a market. Snap the bean at both ends, string, and put in the wire basket of your canner or in a thin cotton bag, and plunge in boiling water for 5 minutes. This removes certain acids and makes the flavor of your beans better. Never forget this when canning beans. Remove after the given time, pack tightly in sterilized cans within ½ inch of top, and fill with hot water. Add 1 level teaspoonful of salt, seal, exhaust for 5 minutes, tip, and return to the canner for 1 hour's boiling.

For No. 10 cans use 1 level tablespoon of salt, exhaust 10 minutes, and boil 2 hours and 20 minutes. Turn cans over once or twice while processing.

Corn, butter beans, peas, squash, and some other vegetables require three days' cooking and are all best when cooked in smaller cans and jars. No. 2 is good.

Select corn when young and very tender; cut from cob with sharp knife, gently scraping cob. Use sugar corn for canning. If this cannot be procured, take field corn, but be sure it is very tender. Do not prepare any more corn than you can immediately, as it quickly sours and you may lose your can. Pack in No. 2 cans only — do not use larger cans for corn — to within ½ inch of top; fill with cold water; add 1 level teaspoon of salt and 2 level teaspoons of sugar; seal but do not tip; allow it to exhaust 15 minutes. Tip the little hole with a drop of solder; return to the boiling water and boil for 1 hour. Remove from fire and set aside for 24 hours.

[1] A timetable will be found on page 296.

After the water is boiling in your canner the second day, place your cans in for a second boiling 1 hour in length, remove, set aside for 24 hours, and boil again 1 hour on the third day.

This is the only sure method of keeping corn. Never use any acids or preserving powders.

Butterbeans, peas, okra, and soup vegetables are canned in the same manner. Add 1 level teaspoon of salt to butterbeans, peas, okra, and soup; and 2 level teaspoons of sugar to peas.

After a can of fruit or vegetables is removed from the canner, it should be cooled as quickly as possible.

#### EXERCISES AND PROBLEMS

1. Examine mold through a good magnifying glass, and see if it looks at all like the picture.
2. Why is a rubber ring used under the cover of the can?
3. Explain why candied fruit does not spoil.
4. Why do figs and dates keep?
5. Why does the boiling temperature help to preserve food?
6. Look up the meaning of the word "sterilize."

## LESSON 13

### VALUE OF FRUIT IN A DIET

WE often think of fruit as a pleasant thing to eat; but we do not realize that it is a food needed to keep the body in health, and that we should use it every day. In what other ways may fruit be prepared for serving?

At one of Miss Travers' lectures before a Farmers' Institute, one man who owned a large apple orchard and sold many barrels of apples, said to her that he had thought people ate apples because they liked them, and that it was news to him that fruit is food.

Indeed, we do like fruit, and we may be glad that so many kinds grow in our own country. When the early settlers began to clear and burn over the land, how happy they must have been to find blueberries and huckleberries and blackberries growing wild for them to gather! What do you suppose the children said when they saw their first wild strawberries and checkerberries in the new land? They found, too, the cranberries in the bogs and the wild red plum on the sandy beaches of the coast. Perhaps in your own home country, wild fruit grows now for you to gather.

Have you ever heard of Johnny Appleseed? He traveled through the forests and over the plains, so the story goes, planting apple seeds wherever he went, and warning the settlements of the coming of unfriendly Indians. Many people who never heard his name have wondered, perhaps, at finding apple trees in unexpected places. Do you know what the word "benefactor" means?—A blessing maker. Do you not think that Johnny Appleseed was a benefactor?

**Planting fruit trees.** You are all benefactors if you celebrate Arbor Day, as they do at the Pleasant Valley School, by setting out a shade tree somewhere near the schoolhouse every year. But let us have more than one tree day, and set out fruit bushes and trees for home use. They do not cost very much; and there are pamphlets and books that tell you what kinds to buy, and how to set them out and care for them. The ground can be enriched with wood ashes and with fertilizer from the

barn and henhouse. Fruit trees and bushes will more than repay what they cost, on account of the value of the fruit in the diet.

**More about the value of fruit.** We have talked about this in the first lesson on fruit drinks, but it is worth while to study the fruit question again. Have you heard the rhyme:

"An apple a day,
Keeps the doctor away"?

This is too much to claim for one apple, but the rhyme is worth remembering because it keeps the importance of fruit before our minds.

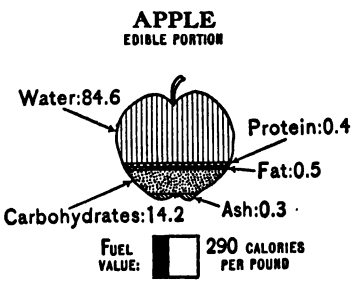



FIG. 54. — The composition of the apple makes it a valuable fruit in the diet.[1]

**What fruit contains.** Although fruits are largely made up of water, they contain sugar, a very little protein, and so little fat that it is not important. The mineral matter is the treasure in fruit, including iron, phosphorus, lime, magnesia, potash, in forms that the body can use. The fruit acids, especially in a meat diet, do away with the need of medicine. Fruit is so valuable in the diet that

[1] United States Department of Agriculture. Office of Experiment Stations, A. C. True, Director. Chart prepared by C. F. Langworthy, Expert in charge of Nutrition Investigations.

you should make *Fruit every day* one of your home mottoes.

**Why does fruit sometimes disagree with us?** If we eat too much unripe fruit or if the fruit is not fresh, it may not agree with us. Cooked fruit can be taken by some people who cannot eat it raw, because the cooking softens the fruit and kills bacteria that might cause some trouble. Cooked fruit is better for little children than raw fruit.

**Fruit juice again.** Clear fruit juice squeezed from the pulp — orange juice, for instance — is given to very young children, who ought not to eat the pulp, and to invalids sometimes.

**How shall we prepare fresh fruit for the table?** *Large fruit* should be washed, pared, or peeled with clean hands. Slice it, sprinkle with sugar just before eating, and serve it as cool as you can make it. You have used bananas, oranges, and peaches in this way. Try mellow apples and pears, and serve with milk or cream and sugar. *Berries* should be picked over and washed, and served in the same way as sliced fruit.

**How shall we cook fruit?** We have said very little as yet about the effect of cooking on our foods. Compare a baked apple with a raw apple, and describe the changes. With your eye you see a change in color. You can easily cut the baked apple with a spoon; but you need a knife for the raw apple. The cooking, then, has softened the skin and the fiber of the apple. Taste the apple. Even if it has been cooked without sugar, you will find that it has a new flavor.

The cooking of fruit on the fire goes on with the work of the sun in ripening fruit on the tree. The difference between cooked and raw ripe fruit is somewhat like the difference between ripe and green fruit. Can you see how? Heat does work miracles. Have you ever heard the true "fairy" story, that all our heat comes from the sun? So, when we "bake" fruit, we are really putting it where it becomes a little riper with the heat of the sun, are we not?

One other thing that the heat accomplishes, we have learned in the lesson on canning. Now you can tell quite a story in your notebook about heat and an apple, illustrated with the picture of a fine, smooth fruit.

**Stewing and baking fruit.** You have seen apple sauce and baked apples at home, and perhaps have prepared both yourself. Miss James asked her cooking class to describe nice ways of cooking apples and other fruit used at home, and to see what they could find in cook books. These are some of the suggestions.

Mollie Stark's grandmother told her about cooking fruit slowly for a long time in an old-fashioned brick oven (see Frontispiece), making a clear, dark red apple sauce. "The longer and the slower, the better," she said; and Mollie's grandmother was quite right. You have not a brick oven, but you can slice apples into an earthen pot, add a very little water and sugar, cover and cook when the fire is low. You will find the apple sauce delicious.

One of the girls described tart (slightly sour) apples

baked with the cores taken out, and with sugar and a tiny bit of butter and cinnamon in each hole. That suggested something else to put in the hole,—a little jelly or a few seeded raisins. When the apples are imperfect, cut them in two, crosswise, for baking. Cut out the core, and in its place put the tiny bit of butter and sugar and the spice, a raisin that has been soaked, or a canned cherry. This is a very pretty way to serve baked apples.

Marjorie Allen reported that her father was fond of baked pears, cooked very slowly in the oven. Miss James said that it is best always to use as little water as possible, and to learn to like the cooked fruit with only a small amount of extra sugar.

**Cranberry sauce or jelly.** Cranberries are delicious stewed with a little sugar; but, if you want a mold of jelly for the Thanksgiving dinner, stew them with a little water, put through a strainer, and heat the pulp. Add as much sugar as you have pulp, cook until the sugar is dissolved, and put in a mold to cool. A few cranberries combine well with other fruit. Try cranberries and raisins in a pudding, and use a little extra sugar.

**Barberries.** This is an old-fashioned fruit that few people use; and yet its tart flavor is quite unlike any other. If the bushes grow wild on your farm, do not let the animals destroy them, but transplant them to the garden. The berries can be used in several ways. They make a delicious jelly, and cooked with molasses

and put away in jars they afford a refreshing drink stirred into cold water in the summer. Miss White of Pleasant Valley suggests that barberries and sweet apples make an excellent jam.

**How can dried fruit be made palatable?** The girls in the cooking class were quite sure that they could not like dried fruit, prunes being the poorest of all. We all "change our minds," which means our opinions, sometimes; and so did they. Stewed figs are good; and so are dates, cooked and spread on bread. Try dried prunes, peaches, apples, apricots, plums, and berries in this way:

*Directions for dried fruit.*

1. Wash the fruit.
2. Soak it for several hours — perhaps overnight — to replace the water which was dried out.
3. Cook it very slowly in a stew pan or in a slow oven, for several hours.
4. Use as little water as possible and only a little sugar.
5. If the fruit has a "flat" taste, add a little lemon juice, or a little cream of tartar, which is an acid, too.
6. Sprinkle chopped nuts on the stewed fruit for variety and to increase the food value.

**Using canned fruit.** If you buy fruit or vegetables in cans, look to see if the top is flat, for if it bulges, the fruit is spoiled. When you use either fruit canned at home or bought from the grocery, let it air in a dish in a clean, cool place. This will give it a better taste; and it improves it even more to reheat it and let it cool again.

**Fruit for dessert.** Fresh fruit and cooked fruit make the best of desserts at the end of a hearty meal, and are quite enough for supper. If you want something more, there are many dishes easy to make with fruit.

**Apple scallop, or Brown Betty.**

*What and how much.*

Bread crumbs and a little butter
Tart cooking apples, enough to fill a dish
Sugar
Cinnamon
A little water

*How to make.* Make a layer of crumbs in a baking dish, and on the crumbs put little "dabs" of butter. Pare and slice the apples and place a layer on the crumbs. Sprinkle with sugar, cinnamon, and a little water. Add a layer of bread crumbs and another of apples. Flavor and cover the top with crumbs. Bake in a moderate oven until the apples are cooked and the crumbs are brown. Any fruit, such as peaches or blueberries, may be used instead of apples. Serve hot with hard or foamy sauce, or cold with cream and sugar. Instead of crumbs the bread may be used in slices, buttered.

*Remarks.* Remember the other food materials that were used in meat scallop, and try cooked rice or hominy or oatmeal in place of the bread. One family calls the fruit scallop Brown Elizabeth when it is made with peaches or apricots; and Black Betty, with blackberries. Perhaps you can name some other members of this group. Stewed dates, or figs, or prunes are delicious with rice in a fruit scallop served cold. They are especially good with milk for little children who are beginning to be given sweets. They need no sugar added.

**Foamy sauce.**

*What and how much.*

| | |
|---|---|
| Butter | 2 tablespoonfuls |
| Powdered sugar | 1 cup |
| Egg | 1 |
| Vanilla | 1 teaspoonful |

*How to make.* Cream the butter. Add gradually the sugar, the egg well beaten, and vanilla. Beat while heating over hot water. If too thick, add a little hot water.

**Fruit tapioca.**

*What and how much.*

| | |
|---|---|
| Minute tapioca | ¾ cup |
| Lemon peel | |
| Boiling water | 2½ cups |
| Salt | ½ teaspoonful |
| Tart apples | 6 |
| Sugar | ½ cup |

*How to make.* Cook the tapioca in the salt and water until it becomes transparent. Core and pare the apples and place in the bottom of the baking dish. Fill the cavities with sugar and add a little lemon peel. Pour the tapioca over the apples and bake in a moderate oven until the apples are soft. Serve cold with sugar and cream.

*Remarks.* This is sometimes called bird's nest pudding. Other fruit can be used. Prunes, with the stones out, are very delicious in the tapioca. There are still other ways for using fruit in puddings and desserts. Some of these you will find mentioned in Lesson 25 and in all cook books.

### EXERCISES AND PROBLEMS

1. Make a definition of "cooking," from what has been said about the baked apple.

2. Make a list of all the different ways of cooking that you know.

3. Explain why fruit should be eaten daily.

4. Can you find a very important reason for cooking figs and dates?

5. Compare the cost of a can of peaches from the grocery with home-canned peaches. What must you take into account?

## LESSON 14

### VALUE OF POTATOES AS FOOD

WARMED-OVER potatoes are one of the best supper dishes. Potatoes, either freshly cooked or served a second time, are good for any meal. How shall we have potatoes for supper?

Americans are said to have the potato habit. We are told sometimes that it might be better to use oftener in their place some other starchy food, perhaps rice or hominy. These do make a pleasant change, but if you prefer potatoes, you can use them as freely as you like; and there are many ways to prepare them to give variety. In spite of the fact that potatoes are attacked by insects and by diseases which the farmer must fight steadily, they are one of our staple foods.

**Why are potatoes such an important food?** Recall to your minds the substances in the foodstuffs that we talked about finding in milk and in bread made from wheat. Make the list on the blackboard or on paper or in your notebook, and check them as we talk about potatoes.

Study this chart (Fig. 55) of a potato, and see if you

understand it. The perpendicular lines show what a large amount of water the potato has. State 78.3 per cent in a common fraction. There is so little of the fat and protein (see the dark lines toward the left) that we do not find the worth of the potato in these. Notice the word " carbohydrate." In per cent it ranks next to the water in quantity. This is a word that you will understand when you study chemistry, but we can learn about it now that, instead of saying starch and sugar, or speaking of the starches and the sugars, the word carbohydrate stands for both. You remember in the lesson on bread we spoke of the fact that starch and sugar are alike, and that one can be changed into the other. The chemist has found them so much alike that he uses this name carbohydrate for both. If you wish to do so, look in the dictionary and see from what other words this one comes.

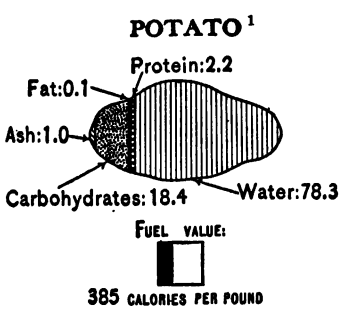



FIG. 55. — The composition of a potato.

Even before you study chemistry you can learn something more about starch and sugar. Burn some sugar until it becomes entirely black. Taste this black substance. You think it does not look eatable? But it is

[1] United States Department of Agriculture. Office of the Experiment Stations, A. C. True, Director. Chart prepared by C. F. Langworthy, Expert in charge of Nutrition Investigations.

what you eat whenever you take sugar or starch; its name is "carbon," and it is the same substance that you burn in the coal in the stove. The heat has driven off the water in the sugar, and left this black carbon[1] behind. We need the carbon for fuel in our bodies. We can use it when we take it in sugar and starch, although, as pure charcoal or carbon, it is useless to us as a food.

Here are two questions that Miss James asked her class, and, in finding out the answers, her pupils learned one of the most wonderful of nature's true stories:

**"Where does the plant find the carbon to make into starch and sugar?"**

and

**"From what source came the carbon of our coal?"**

Here is another way to put the question. You may have heard your father and his friends talking over the question of fertilizers. If so, they have spoken of nitrogen, phosphorus, and potash. Probably they have complained of their cost. How much does your father pay per ton for the carbon for his crops?

**Energy for us in the potato.** The carbon is fuel for us. It occurs in the carbohydrates, starch and sugar. Starch and a little sugar are in the potato (18 per cent); therefore, the potato gives us energy. This is one value. Ten cents' worth of potatoes at sixty cents per bushel gives us more energy than ten cents' worth of bread, even.

[1] See page 299.

**Mineral value of potato.** Look at Fig. 55 again. In that small space at the left is pictured the other prize in the potato, the mineral matter, — the ash that cannot be burned. There is a high percentage of potassium and calcium, and of phosphorus and iron, also. These the potato takes from the soil and stores away for the young plants that would grow from the buds. Our bodies need mineral matter, too.

So let us keep on growing potatoes, in spite of Colorado beetles and the blight and scab.

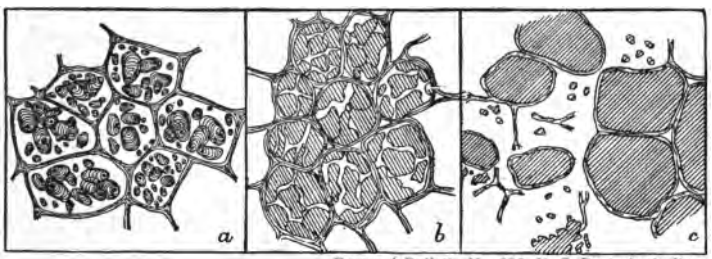
The cooking class was very much amused when Marjorie Allen told them what her little sister said at supper the evening after they had all studied the composition of the potato. Little Alice looked at the baked potato on her plate, and said, "Which end has the mineral matter?" She thought that the chart of the potato was an exact picture. The little chart shows you how much mineral matter there would be, if it were all by itself and not mixed with the other substances in the potato.

**What is a starch grain?** The illustration (Fig. 56) shows you a slice of potato, magnified, before and after cooking. At the left the small bodies are the starch grains. See how the heat of the boiling temperature of water changes their shape, unfolding or bursting them. The heat also softens the fiber of the potato. Thus, with these two changes made by heat, the potato is made more digestible.

**How shall we cook our potatoes?** The answer to this

would make a long list, and you might begin to make this list by writing down the ways that you know.

The *best* way to cook the potato is one that keeps in the mineral matter. If we pare the potato, we lose the mineral matter near the skin, and allow a further loss as the potato cooks in boiling water. The best ways, then,




*Farmers' Bulletin No. 295, U. S. Dept. Agriculture.*

FIG. 56. — Changes of starch cells in cooking: *a*, cells of a raw potato with starch grains in natural condition; *b*, cells of a partially cooked potato; *c*, cells of a thoroughly boiled potato.

are baking, steaming, or boiling with the jackets on. Potatoes cooked in either of these three ways can be made into other "tasty" dishes. Learn how to boil a potato well; and serve it plain sometimes.

**New and old potatoes.** Potatoes are "new," fully ripe, and old. The new potato is in market in July and August, and may be known by its very thin skin. The later potatoes have a thicker skin, but the color still is fresh. In the spring after its winter storage, the potato is "old." It seems a little less firm; the color of the skin is somewhat changed; perhaps, the buds in the eyes of the potato are beginning to grow. When cooked it

has a stronger flavor and a rather darker color. If the potato has been frozen, it has a sweet taste and the quality is waxy. Potatoes are sometimes poor in quality when the season is unfavorable, or when some potato disease is prevalent.

**1. Baked potatoes.**

1. (The best method for new potatoes.) Select those of even size. When scrubbed, place them in a shallow pan or upon the rack of the oven. The oven should be hot. The length of time depends upon the size of the potato; forty-five minutes is the time for medium size.

*Courtesy of Department of Foods and Cookery, Teachers College, Columbia University.*

FIG. 57. — Baked potatoes, mashed, seasoned, and returned to the skins.

Test by pressing firmly, or by sticking in a fork. When the potato is done, it feels soft to the fingers. If the potatoes cannot be eaten at once, break the skin to let out the steam, cover with a cloth, and keep them hot.

Here is a nice way to serve potatoes. Cut them in two,

lengthwise; sprinkle with salt, and add as much butter as one would use at the table; break up the potato with a fork, leaving it in the skin.

*Potato on the half shell* is one step more. Cut the potatoes in two, lengthwise; take out the potato and mash it with butter, milk, and salt; add about a teaspoonful of butter, a tablespoonful of milk, and a shake or two of salt, to each potato. Beat this well, put back piled lightly in each half shell, and brown the tops slightly. Sometimes you can put in a little chopped meat. The beaten white of an egg may be added to make a potato puff.

2. The same as baked potatoes, except that the potatoes are pared before baking. This is a good method when the skins are poor. A brown crust is formed on the potato, which is crisp and pleasant to eat. Before baking, large potatoes may be cut in two or even sliced.

**2. Boiled potatoes.**

Have enough boiling water to cover the potatoes. Put the potatoes of uniform size into the kettle, one at a time, that the boiling may not stop. Allow a gentle boiling to continue until the potatoes are done. Why avoid rapid boiling? Test with a fork at the end of half an hour. When the potatoes are mellow, drain off the water, and set the kettle where the remaining moisture will steam off. Shake gently to hasten this process, and sprinkle the potatoes with salt. If they must stand before serving, shall you place a tin cover or cloth over the kettle? Old potatoes with a strong flavor should be pared before boiling, or even soaked in cold water.

**3. Mashed potato.**

Mashed potato can be very poor when wet and lumpy. Do not use new, poor, or very old potatoes. See that the boiled potatoes are as dry as can be with every particle of water steamed away. Mash thoroughly with the wire masher; add

butter or butterine, salt, and milk in about the proportions given for potato in the half shell. Use a tablespoonful or so of cream if you have it. *Beat vigorously.* The mealiness of

*Courtesy of Department of Foods and Cookery, Teachers College, Columbia University.*

FIG. 58. — A dish of mashed potato daintily served and browned in the oven.

the potato and the beating make mashed potato perfect. The mashed potato should be light and moist, but *not wet.* Reheat in the kettle. Pile lightly in a hot dish and serve; or smooth and brown the top before serving.

**4. Scalloped potato.**

Scalloped potato is a good supper dish.

Wash, pare, and slice the potatoes in $\frac{1}{4}$ inch pieces. Grease an earthen or enameled baking dish. Cover the bottom of the dish with a layer of the slices, sprinkle the slices lightly with flour, and put on two teaspoonfuls of butter, or butterine, in small bits. Continue until the dish is nearly full. Pour in milk to barely cover the potatoes, put a cover on the dish, and set the dish in a moderate oven. Remove the cover in time to allow the top to brown. Allow rather more than half an hour for the baking.

**5. Creamed potato.**

*Here is an easy way.* Chop cold *baked* or *boiled* potatoes with the chopper. Allow 1 tablespoonful of butter to 1 pint of chopped potato. Melt the butter in a saucepan. Stir in the potatoes. Shake from the dredger the same amount as a tablespoonful of flour, stirring the potato with one hand as you shake with the other. Pour in enough milk to barely cover the chopped potato. Set the saucepan in the coolest spot on the range, or on an oil stove with low flame, upon an asbestos mat; *or* turn all into an earthenware jar or baking dish, and bake slowly until it becomes creamy.

**6. Potatoes warmed over in fat.**

This is an old-fashioned way and a good one. Have only a little fat in the frying pan; and that very hot. The slices of potato will become brown as you turn them from side to side.

**7. Hashed brown potato.**

This is a delicious way to warm up cold potatoes. Chop the potatoes. To a quart of chopped potato add a tablespoonful of flour. Heat a frying pan and melt in it two tablespoonfuls of beef fat. Stir the potato thoroughly into the fat. Press the mixture firmly down and set the pan where the potatoes will brown on the bottom. It is better to do this slowly, and you should allow half an hour. Turn the potatoes out on a large plate. There should be a nice brown crust, just as you have it in corned-beef hash.

### EXERCISES AND PROBLEMS

1. Make a list of the foodstuffs in potato, with the percentages.

2. Make a list of the different ways of cooking potatoes.

3. Explain why potatoes, meat, and meat gravy containing fat make a good meal.

4. Then, when you put other foods with potato to make a meal, what should the other foods contain?

5. Can you now add to or change the definition of cooking that you made in the lesson before?

## Lesson 15

### GRIDDLECAKES AND SWEET CAKE

Are griddlecakes and sweet cake wholesome for supper and other meals?

The quick breads are convenient for any meal when there is time enough to bake them; especially in cold weather, when there is more likely to be a steady fire.

The quickest batter to mix and bake is the griddlecake, or pancake. Almost every one likes them, when they are a fine brown, served with sugar, or maple sugar or sirup, or molasses. But how wholesome a food are they? This was another question that Miss Travers answered at the school exhibit, when they were discussing quick breads. The answer was something like this: We must remember that, although two cooked foods may have the same materials in them, one is easily digested and the other is not. And why?

**What do we mean by "digestible"?** "To digest" means "to dissolve," to make liquid. All solid food must become liquid, before it can be absorbed and carried about the body by the blood. The water that we drink helps to do this, but nature has provided us with substances, beginning with the saliva in the mouth, that help in the work of dissolving. You know that

when you begin to chew food the saliva begins to flow, and, when the food reaches the stomach, the stomach begins to churn the food, and the gastric juice flows from the walls of the stomach to help this digestive process.[1]

What difference is there between the digestibility of the griddlecake, and of a light, dry muffin or biscuit? The flour in the griddlecake is not well cooked, for the time is too short. The cake is so soft that we do not chew it; and so the starch in the flour has missed the first step of digestion. This pasty mass in the stomach is a bad thing, especially with the large amount of sugar that we usually take on griddlecakes. *But we like griddlecakes and we cannot go without them!* Can we not, when it is a choice between being strong and well, happy and helpful, on the one hand, and half well and dull with indigestion, on the other? There is no reason why healthy people should not eat griddlecakes once in a while; but griddlecakes are not meant for a steady diet.

**How can we make griddlecakes more digestible?** If people insist on eating them, we will try to make them as wholesome as we can.

1. Use some material that has been cooked before, — bread crumbs, cooked corn meal, oatmeal, rice, or any other cooked cereal.

2. Make them very light and porous with sour milk and soda, or with baking powder. One good cook

[1] See a physiology for further description of the digestive process.

makes delicious, dry, light griddlecakes by using sour milk and soda, and a little baking powder, too.

3. Bake the griddlecakes as thoroughly as you can. Do not take them from the griddle the moment they are brown, but let them stand until they are cooked "inside."

4. Do not drown them in sirup or bury them in sugar when you eat them.

5. Take small mouthfuls, and try to chew each portion.

**Sour milk griddlecakes.**

*What and how much.*

| | |
|---|---|
| Flour | 2½ cups |
| Salt | ½ teaspoonful |
| Melted butter | 2 tablespoonfuls |
| Sour milk | 2 cups |
| Soda | 1¼ teaspoonfuls |
| Egg | 1 |

*How to make.* Mix dry ingredients. Add sour milk, egg well beaten, and melted butter in order given. Beat thoroughly. Drop by spoonfuls on a greased griddle, and let cook until the edges are done and the cake full of bubbles. Turn with a cake turner or knife, and cook on the other side. Serve with butter and sirup or scraped maple sugar.

**Cake making.** One of the Pleasant Valley girls said that her father and brothers wanted cake at every meal. Cake has good food materials in it; so why should we not eat it often? Some food has to be cooked; why should it not be cake? The answer to this is a simple one. Although sugar is an important fuel food, yet,

if we use too much, it is likely to cause an acid ferment in digestion and to irritate the stomach. Little children should not take more than two ounces a day, and grown people about four. We should not eat sweets between

*Courtesy of the Department of Foods and Cookery, Teachers College, Columbia University.*

FIG. 59. — Marjorie Allen made a loaf of cake for supper one Saturday.

meals; and the best time for a piece of candy, even, is at the end of a meal.

Cake is a soft food, too; so we swallow it easily without chewing. For this latter reason, cookies, which are drier, are more wholesome than cake. Moreover, if we depend on cake, we may take less of more useful foods like bread and butter, vegetables and fruit, eggs and milk.

**Must we give up cake?** No, indeed; but we should be temperate in using it. We think of the word "temperance" in connection with alcohol, but it can be applied to eating, just as well.

Miss James gave very little time to cake making in her cooking lessons, because the Pleasant Valley girls, who could cook little else, already knew how to make cake. Most families have good rules of their own for cake, cake filling, gingerbread, and cookies.

Miss James advised the girls to learn to make one cake mixture and to use it with different flavorings and fillings. They laughed at first when Miss James spoke of one-egg cake, and were sure that it would not be good, but they found it very light and well flavored. Miss James explained that when eggs bring a good price it is sensible to use as few as possible in cake. Here are a few of her rules:

**A table of three recipes for one and two egg cake.**

| *What and how much.* | | | |
|---|---|---|---|
| Butter | 4 tb. | 5 tb. | 4 tb. |
| Sugar | ¾ c. | 1 c. | ½ c. |
| Egg | 1 | 2 | 1 |
| Flour | 2 c. | 2 c. | 2 c. |
| Baking powder | 2 t. | 2 t. | |
| Moisture | ½ c. | ½ c. | |
| Molasses | | | ½ c. |
| Vanilla | ½ t. | ½ t. | |
| | or | | |
| Chocolate | 2 tb. | | |
| Ginger | | | 1 t. |
| Allspice | | | 1 t. |

**Mixed spices for a cake.**

| | |
|---|---|
| Cloves and allspice | ½ teaspoonful each |
| Mace and nutmeg | 1 teaspoonful each |
| Cinnamon | 3 teaspoonfuls |

*Remarks.* This is the table that Miss James showed the class how to use in their notebooks. You have made quick breads. Can you not think out the way of mixing cake? Remember about creaming (rubbing soft) the butter and sugar. See Lesson 20.

**Cookies.**

*What and how much.*

| | |
|---|---|
| Butter | 1 cup |
| Sugar | 1½ cups |
| Eggs | 2 |
| Milk | 3 tablespoonfuls |
| Flour | *about* 3 cups |
| Baking powder | 1 teaspoonful |
| Salt | 1½ teaspoonfuls |

*How to make.* The flavoring may be two teaspoonfuls of vanilla, or lemon essence, one or two tablespoonfuls of ground spice, or caraway seeds.

*For baking* use a floured iron sheet or flat pan. Temperature 400° F., or even more. The baking requires from 15 to 20 minutes, depending on the thickness of the cooky.

*Method of mixing.* Sift all the flour, and stir the salt and baking powder with one cup of the flour. Cream the butter, and beat in the sugar. Beat the whites and yolks of the eggs together, and add to the creamed butter and sugar. Add the flour and milk alternately; that is, a quarter or third of the flour, then a portion of the milk, and so on. First stir; then beat vigorously.

*Shaping the cookies.* Turn the dough out upon the floured board, gently roll it out to a quarter of an inch, cut and place

cookies in a floured pan; or, cut off a small piece, roll it in the flour, and pat it down to a round. This last way may seem to take longer; but it is easier, and there is no board to clean afterward.

*A plainer cooky* is made with ½ cup butter and ½ cup water or milk, with somewhat more flour.

*Remarks.* These are a good sweet for children to take for the school lunch and to serve at entertainments.

**Sugar from the farm.** When the home-making class at the Pleasant Valley School studied the question of sugar and sweet cakes, Miss James talked about the use of maple sugar in place of the cane or beet sugar that we buy. There is a sugar-maple grove on the Allen farm, and the pupils were invited to a "sugaring off," when the time came for making the sugar and sirup.[1] Mrs. Allen has the old-fashioned habit of using maple sugar at the table for cereals, for berries and fruit, and even for coffee and tea; she finds it useful in cooking, also. It is worth while to set out sugar maples, for they grow as far south as Texas, as well as in the eastern states, middle west, and northwest.

**Why not keep bees?** We may make sugar in the home grounds, and employ honeybees to do the work. A few hives are not difficult to care for, and the bees will more than repay us for our labor.

**Using honey in place of cane sugar.** Honey is delicious on cereal and bread. We are experimenting with its use in cooking, a practice common in old times,

[1] See Farmers' Bulletin No. 516, and Bureau of Forestry Bulletin No. 59, U. S. Department of Agriculture.

especially in Europe. It may be used in cakes, cookies, and desserts. There is an acid in honey, and, therefore, it can take the place of molasses in some recipes.

**Soft honey cakes.**[1]

*What and how much.*

| | |
|---|---|
| Butter | ½ cup |
| Honey | 1 cup |
| Egg | 1 |
| Sour milk | ½ cup |
| Soda | 1 teaspoonful |
| Cinnamon | ½ teaspoonful |
| Ginger | ½ teaspoonful |
| Flour | 4 cups |

*How to make.* Rub the butter and honey together; add the egg well beaten, the milk and the flour sifted with soda and spices. Bake in a shallow pan.

EXERCISES AND PROBLEMS

1. Explain why a dry, well-baked muffin is better than a fresh griddlecake.
2. Study the two rules for cake and see how many variations you can make.
3. Describe the baking of a loaf of cake.
4. Why is it better not to eat sweet cake at every meal?
5. Explain why sugar, which is a good food, can do us harm.

## Lesson 16

### CLEARING UP

Have you ever wished at the end of a meal for a good fairy like one of those in the stories who waves a wand: "Presto" — and table and dishes vanish? Can "clearing up" after supper be made pleasant?

[1] See Farmers' Bulletin No. 653 for this and other recipes with honey.

There are some people who like to wash dishes. For the rest of us there is nothing to do but to make an art of cleaning up thoroughly, quickly, and cheerfully. One of our great writers, Mr. William James, tells us that when we feel unhappy, if we behave as if we were cheerful, all at once we shall find that we really are cheerful! Try it when it is dish-washing time.

When dish washing is done well, it is really a pretty piece of work. When we hurry through and it is badly done,—the dishes, spoons, and forks are left "sticky," the sink greasy, the towels unclean,—what more unpleasant task!

Here is something to remember at the very beginning of our talks about cleanliness. Nothing can be half-clean. A thing is either clean, or it is not; and when it is not clean it is "dirty." If one spot of spilled food is left anywhere, how soon that one fly finds it!

**The importance of cleanliness.** Cleanliness is not only beautiful and comfortable, but it is an enemy of ill health, sickness, disease. When we study sanitation, which we hear about so often, we are studying how to keep clean; and that is all. The word sanitation comes from a Latin word meaning "health." You cannot see what this has to do with dish washing? Sore throats and other sicknesses will go from one member of a family to another on half-washed spoons, forks, cups; and a musty dishcloth or mop may be a source of illness.

**What does cleaning up after a meal mean?** It means putting the uneaten food neatly away; collecting the

scraps; leaving the table in order, and the floor underneath free from crumbs; having all the dishes washed, the glasses and silver shiny and set away in order, and the sink and dish towels spotlessly clean.

**What do we need for dish washing?** Water, air, sunshine are nature's cleansers, always at work if we give them a chance. When we wash dishes, we need plenty of clean hot water.

**Soft and hard water.** Rain water is always "soft." Brook and spring water and even well water are sometimes so. When the water takes up lime or iron from the soil, we then have a "hard" water; and you know that it is hard when the soap does not make foamy suds. One kind of hard water is improved by boiling, and another is not; with either we need to use borax, ammonia, or some stronger washing powder in the water. If you are still making and using the old-fashioned "soft soap," there is nothing better to soften the water; but many people have given up doing this.

**Plenty of hot water.** When there is running water in the house, the easiest way is to have a boiler connected with the stove, and a water back put in for heating the water. Some stoves, either coal or wood, come with a tank at the back into which water can be poured. It is in summer weather when we do not need a hot fire that the question of water is troublesome. If you are using kerosene, you may still have plenty of hot water, with a little thought and care. Study in Lesson 26 the Atkinson and the fireless cookers, and this may suggest

to you a way of having hot water for dishes without heating the kitchen. A large pail of water can be brought to a boil on a kerosene stove, and kept hot either

*Courtesy of Miss Ethel Dole.*

FIG. 60. — Washing dishes. Notice the rack at the left for draining dishes. The sink is too low.

in the Atkinson or in a fireless, ready for the next dish washing.

**A word about soap.** Soap making was always done at home in the days of our great-grandmothers. For this purpose they saved fat to be boiled with lye made from wood ashes. In these days a good soap can be purchased cheaply. Buying soap is one way of saving

time and strength in the country home. It does not cost much less bought by the box than by the dozen cakes or bars, but it can be laid away to harden if we buy a large quantity at one time. Borax or naphtha soap is a help when the water is hard.

**Washing the dishes.** With plenty of hot water, soap, and something to soften the water, with a dish-pan and another pan for rinsing, we are ready for action. Remember to have ready a clean dishcloth and towels, — if used, — dried in air and sun, although not necessarily ironed. Perhaps you have a soap shaker, with small pieces of soap put into it. Make one from a tin can, with holes driven in by a large nail and hammer, near the bottom of the can. You also need fine sand, or a gritty cleaner or soap, and a small stiff brush.

1. The cooking utensils have been standing with cold water in them; or, if greasy, with hot water and a little washing powder.

2. Scrape and pile the dishes — dishes of a kind together. Rub greasy dishes off with soft paper, and put the paper in the stove.

3. Put water in pans, and use the shaker vigorously. How clean and sweet the soapsuds smell!

4. Wash a dish at a time, the cleanest first. Why? Do not fill the pan with dishes first. Why?

5. Rinse the dishes in the clear hot water pan and wipe; or, better still, arrange the dishes as in Fig. 61, pour boiling water over them, and allow them to drain dry.

6. Change the dishwater if it begins to look greasy and unpleasant.

7. Wash the cooking utensils as clean as the glasses and silver. This may mean a good scrubbing on the bottom. The iron pot or pan can be just as clean, and should be, as any other dish. Be doubly sure that all utensils that can rust are dry, before you put them away.

8. If there are any steel knives, leave them clean and dry.

9. Wash out the towels in clean soapsuds, rinse and hang outdoors; or, if stormy, dry them near the stove, and then put them away.

10. Wash out the dish pans and put them to dry.

11. Wash the sink, leaving it sweet and clean and dry. If there is a waste pipe, with or without running water, put some cleanser down, with some clean water. A little kerosene helps here.

12. Put all the dishes away.

13. Of course, a thoroughly good housekeeper leaves the kitchen table and stove clean, too.

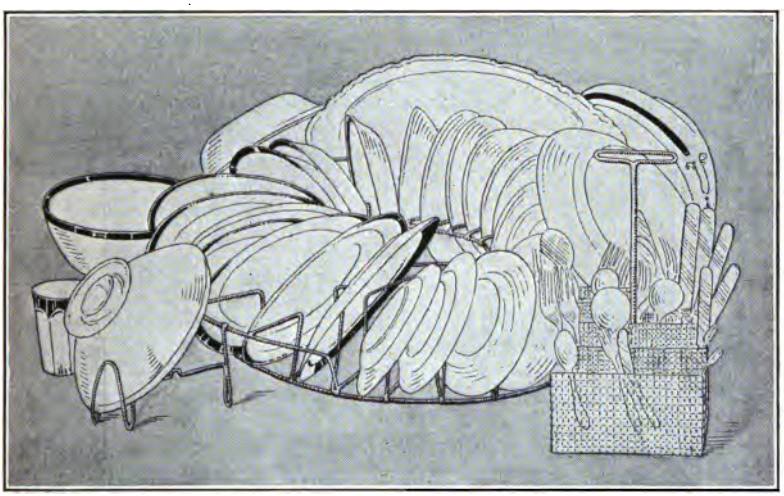
Do you draw a long breath, glad that it is over? It is not so long a task as it sounds, if done promptly. If you hurry too much, see the "nicks" on the dishes.

Can we not save some time and trouble?

Yes, indeed. Barbara Oakes reported a cleaning-up game, where the children divided the work so there was something for No. 1, No. 2, No. 3 to do, taking turns at different times. Barbara said that one was made inspector, to see that each thing was properly done. They

had found that singing in chorus helped a bit, when everybody seemed a little " out of sorts."

A number of people have been studying the question of dish towels, and they tell us that the very cleanest way to finish off our dishes is to arrange them in a rack in such a way that they can be well rinsed with boiling



*Courtesy of Domestic Utilities Co., Newark, N. J.*

FIG. 61. — Dishes placed in a round rack.

water. If they have been thoroughly washed in the soapsuds, the hot water rinses off the suds and the dishes will drain dry. Figure 60 shows such a rack standing on the drain board at the left. A *better way* is to have a round rack with a handle. Place the dishes as you see them in Fig. 61. Empty the dish pan, fill it with hot water, and set it on the stove. Lower the rack

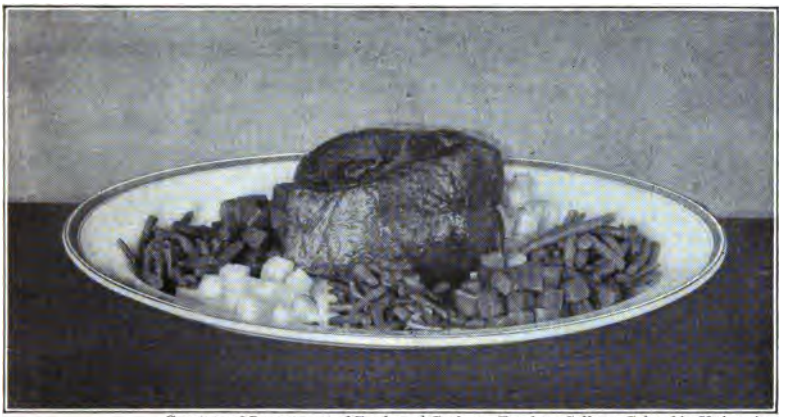
of dishes into the water and let it remain until the water boils. Lift the rack, drain off the water, and set the rack where the dishes will dry quickly. A few may need polishing with a clean towel.

**Can we "save dishes"?** This you will have to talk over with Mother. Somebody suggests using paper

*Courtesy of New York State College of Agriculture at Cornell University.*

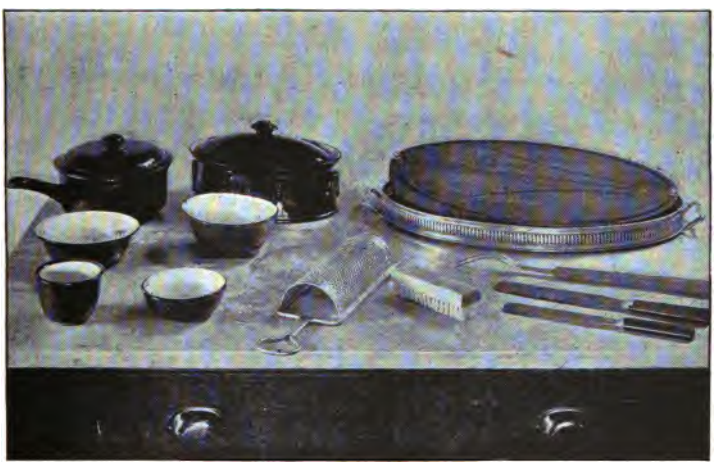
FIG. 62. — Paper dishes for saving work.

or wooden plates sometimes in summer, and burning them. Another way to save dishes is to put more than one kind of food on the serving dish or platter (Fig. 63), or to put the food on the table in the dish in which it is cooked, when this is possible (Fig. 64). If we use large plates at each place, we can put several kinds of food upon the plate, instead of having many small dishes. The use of heavy plated knives will save rub-



*Courtesy of Department of Foods and Cookery, Teachers College, Columbia University.*

FIG. 63. — One way to save dishes is to put more than one kind of food on the serving dish or platter.



*Courtesy of New York State College of Agriculture at Cornell University.*

FIG. 64. — Utensils in which foods may be both cooked and served.

bing. Some people save one dish washing by rinsing off the supper dishes, piling them up, and covering them to be washed with the breakfast dishes; but perhaps this is not a good plan with a very large family where we need a large number of dishes.

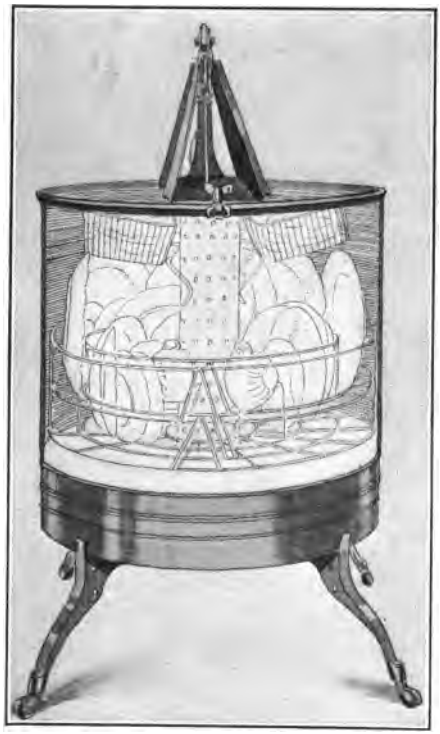


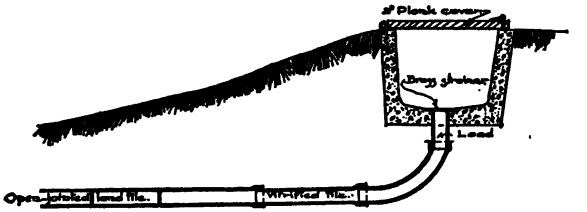
FIG. 65. — A dishwasher saves time and work.

**A dishwasher.** Show your mother this picture, Fig. 65, and ask her what she thinks about having a dishwasher. There are several made for family use, which may be found a help in a large family. This would be a good question for the Woman's Club to ask Miss Travers or some one else at the State College. Can you recommend a good dishwasher?

**What shall we do with our waste water?** It is all very well to turn dishwater into the sink and let the water run out through the drain; but what becomes of it?

All slops from the house must be carried far away

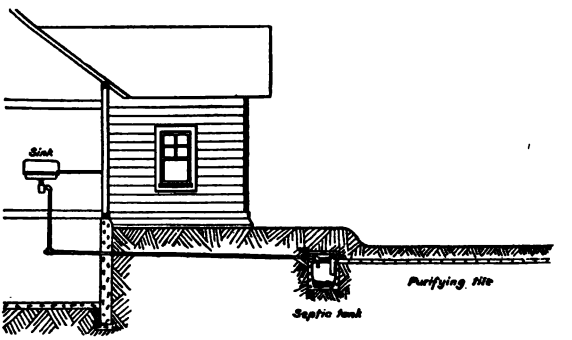
from the house and poured out in some way so that no moisture or filth collects. In the lesson on vegetables



*Courtesy of New York State College of Agriculture at Cornell University.*

FIG. 66. — A waste water hopper prevents moisture and filth from collecting around the house.

we speak of taking out the slops in dry weather for watering purposes. Drainage from the house can be carried out in pipes to the garden, provided the slope of




*Courtesy of New York State College of Agriculture at Cornell University.*

FIG. 67. — A safe plan is to have a septic tank built underground into which the waste water drains.

the land is right for this. If this cannot be done, a very safe plan is to have a tank built underground into which the waste water drains and from which it is

carried out. Never let slop water of any kind collect in a wet or bad-smelling spot under the window, or anywhere near the house. This is one of the most important matters in our housekeeping. Your mother and father can have pamphlets from the government telling them just what to do.

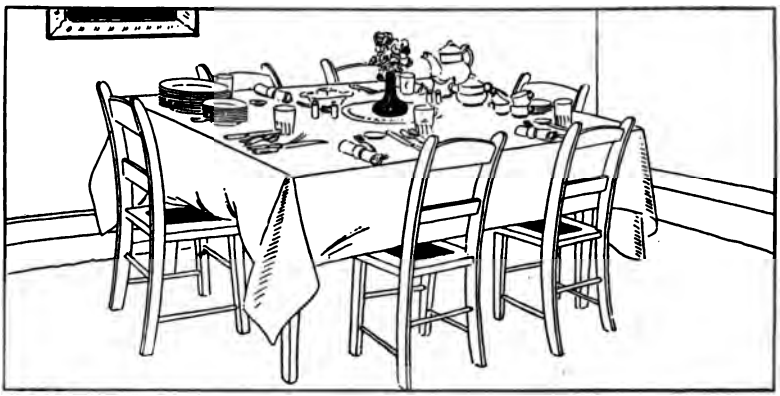
### EXERCISES AND PROBLEMS

1. Why may it be dangerous to have slops poured out near the house?
2. Make a plan of taking care of slop water at home.
3. How can you simplify dish washing at school and at home?
4. What are the most important points in dish washing?
5. What is the danger in a damp, old mop or a partly soiled dish towel?
6. Give some suggestions for *saving dishes* in the preparation of a meal.
7. It is baking day. How are you going to "save dishes" and make clearing up easy?

### REVIEW

1. Make a drawing showing how to place the dishes and the silver for a home supper for six persons.
2. What do you like for supper in the winter? for supper in summer?
3. Can you think of some meat substitutes for supper?
4. What is essential to a good salad?
5. You have been told that you should not drink tea. Do you know why tea is injurious?
6. Careless cooks make very poor tea. Just how should tea be made?
7. Give the two methods for canning fruit.

8. How does preserving fruit differ from canning?
9. Outline the process of making jelly.
10. What fruits will you use when you make jelly? Why?
11. You have heard of girls' canning clubs. Can you tell how to can tomatoes or peas?
12. What is the value of fruit in the diet?
13. In what ways may apples or pears be cooked during the winter?
14. Does the potato contain any valuable food substances?
15. Describe the effect of cooking on the potato.
16. There are many good ways of cooking a potato. How many ways can you describe?
17. Have you learned anything about washing dishes?
18. What is the difference between hard and soft water?
19. Tell how you can help in preparing supper at home on Saturday.



# CHAPTER IV

## THE HOME BREAKFAST

### Lesson 17

#### SUITABLE BREAKFAST DISHES

**What do we like for breakfast?**

When the Pleasant Valley cooking class began to ask this question, there were so many different answers that the chairman of the luncheon committee for the week was glad that they were not having breakfast at school, because it would be harder than ever to suit everybody.

How can you explain such differences as these? Miss James said that in the warm weather, even when she was teaching, she was satisfied with fruit, boiled eggs, buttered toast, and cocoa or coffee; on a cold morning, in addition to the other things, she liked a large portion of oatmeal or some other cereal with cream or with but-

ter and sugar; but she seldom ate meat for breakfast. Most of the pupils reported that their fathers were not suited at all with such a meal; that for breakfast they called for ham and eggs, or bacon and eggs, boiled potatoes, and hot biscuit or corn bread, perhaps doughnuts, or even pie. Mollie Stark said the doctor told her father that it was no wonder he had indigestion on Sunday when he ate sausages and buckwheat cakes with maple sirup for breakfast, and did much less work than usual; and that, on a week day in the winter, if he were working in the wood lot at chopping trees, it would be quite another matter.

This led to a very interesting talk about the kind and amount of food for different people, at different times.

**Breakfast plans.** Several different plans for breakfast were put on the blackboard, somewhat as follows:

BREAKFAST PLANS

| I | II | III | IV | V |
|---|---|---|---|---|
| Fruit | Fruit | Fruit | Fruit | Fruit |
| Toast | Cereal | Meat | Cereal | Cereal |
| Beverage | Toast | Toast | Meat | Meat |
| | Beverage | Beverage | Toast | Another hot dish |
| | | | Beverage | Toast |
| | | | | Beverage |

Miss James explained that bread or biscuit might take the place of toast, and that eggs, milk, or fish could be substituted for meat. Miss James said, also, that in all these plans the foodstuffs are present; that is,

starch and sugar, fat, protein, mineral substances, and water. In breakfast V there is a greater quantity of food all together, and more of the protein and fat than in breakfast I.

How can there be so many kinds of breakfast? They are all real, because somewhere just such meals are being eaten by somebody.

**One reason for a light breakfast.** When you are traveling on the continent of Europe you have coffee or chocolate, and rolls, with perhaps a little honey, given to you for the first meal of the day; and you soon find it is all you want, because your last meal the evening before was dinner, the heartiest of the day. In some of the cities of our own country, many people eat very little breakfast, and that of a simple kind, because they, too, have had their dinner at night. So, after a heavy meal late in the day, a light breakfast seems to be the natural thing. But that is only one reason for the differences.

**Work and eating.** There are people in the big city who want a breakfast like IV or V, and who might be willing to go without the fruit for something more "hearty." The man who is working hard with his muscles in the open air eats more and can digest kinds of food that another cannot who is quieter, and who is sitting at a desk all day. Marjorie Allen said that her uncle, who is the cashier of a bank, wants a breakfast something like Miss James's, or like I, II, or III. The amount and kind of physical work that you are to do

after breakfast, then, should affect what you eat. If you yourself should eat sausages and breakfast cakes with sirup for breakfast and then should sit down to work on a problem in square or cube root, you would probably find yourself sleepy. But if you are in good health, if it is a Saturday morning in winter, and if you are going skating, you will be better able to digest such a breakfast.

**How does the season of the year affect the meal?** In the summer time it is hard to digest sausage and griddle cakes with sirup. Meat is not the best food for hot weather. Yet the farmer needs a hearty breakfast to do a day's work. Give him some cheese. Indeed, in haying time bread and milk would make one of the best of breakfasts, if Father could be persuaded to think so. If he thinks that would not "stay by" him, why not oatmeal, with bread and milk, then?

**Size and eating.** Who eats more, the baby or a grown person? A strong man, six feet tall, weighing say 180 pounds, must eat more for breakfast than a small person; somewhat as a large stove takes more fuel than a small one. If he is in health and working hard, he can digest food and the body can use food of a kind that gives other people indigestion. But such a man even can make mistakes in his food sometimes.

**A few breakfast dishes.** Suppose we plan for a breakfast like No. IV, — baked apples, oatmeal with milk and sugar, a meat dish, corn bread, and cocoa or coffee. What shall we have for the meat dish?

Do you know how to make a good corned-beef hash?

**Corned-beef hash.**

*What.* Cold corned beef, and cold boiled or baked potatoes.

*How much.* Equal amounts of both and enough to fill the large frying pan, or "spider," as it is sometimes called, if that is enough for your family.

*How to make.* Chop the meat and potatoes together; add a little water and a tablespoonful of flour. Mix all well. Heat the pan, and put in enough fat — say beef fat — to cover the bottom of the pan. Turn in the meat and potatoes, and smooth the top. Let it cook where it will brown but not burn. It should be put on when you are beginning to get breakfast. When breakfast is ready, slip a knife around the edge and under the hash. Turn it out on a hot plate or platter. It should have a nice, brown crust. Never mind if the crust breaks, for the hash will have a good flavor, even if if it does not look so well.

*Another way* is to use mashed potato. Then the chopped meat must be mixed with the potato while the latter is hot. This mixture can be baked and served in an earthen dish.

**Fish hash.**

*What.* Salt codfish, raw potato; fish shredded, and potato cut into small pieces. 1 or 2 eggs.

*How much.* Equal parts of the two: 2 cups of codfish, and 2 cups of potato. 1 egg will make a good dishful.

*How to make.* Have a saucepan ready with enough boiling water in it to cover the potato and fish. Turn into it the fish and potato. Let them cook until the potato is tender — about 20 minutes. Drain off the water, break the egg into the hash, mash, and beat hard for a minute. While the potato and fish are cooking, grease a baking dish. Turn the mixture into the dish, and brown the hash in the oven.

*Another way* is to cook 2 eggs hard while the potato and fish are cooking, slice them, and put them on top of the hash in the dish in which you will serve it. Do not brown the top. Which of these two ways is quicker?

**Creamed dried beef.**

Do you ever smoke beef on your farm? You are fortunate, if you do.

*What.* Dried beef sliced, milk or skimmed milk, beef fat, flour.

*How much.* Enough beef to nearly fill the frying pan. 2 tablespoonfuls fat, and about 2 tablespoonfuls flour. Enough milk to cover the beef, a cup or more.

*How to make.* Put the beef in the pan. Pour on hot water and let it stand a few minutes on the stove. Pour off the water and let the beef steam off for a minute. Add the fat and stir until the fat begins to "sizzle." Shake on the flour, from a shaker if you have one, and stir again until the flour is mixed in evenly. Pour in the milk, cold; stir once more. Let the pan stand back on the stove, stirring once in a while until the milk is thickened. Serve as it is, or on toast.

**"Frizzled" beef with egg.**

*How to make.* Do everything as you did with the creamed dried beef, through stirring in the fat. Then add 2 or 3 beaten eggs; stir very fast, — *scramble*, in fact, — until the egg is cooked; then serve at once.

We shall find some other breakfast dishes farther on in the book.

**How can we make it easy to get breakfast?** We have said nothing about Mother, so far, in our talk about breakfast, but she is probably the one who is interested in preparing the meal and in having it ready quickly.

One way to save time in the morning is to make some things partly ready the night before.

Read the two recipes for hash again, and see what could be done beforehand. These recipes and the two for dried beef are planned to use as few utensils as possible. This saves dish washing. In the lessons on cereals we shall find there are other ways of saving time for Mother in the early morning.

**Making coffee for breakfast.** Many grown people think that they cannot do without the cup of fragrant coffee in the morning. Miss James explained to the cooking class that, although young people should not drink it themselves, they ought to know how to make it well for other people. She advised them to use, instead of true coffee, a hot drink made from grain roasted and ground.

**What is cereal coffee?** Mollie Stark's grandmother told her that crust coffee could be made from the old-fashioned brown bread, which is a mixture of rye and Indian meal, sweetened with a little molasses. The crusts should be dried in the oven, made fine with a rolling pin, and kept dry in a jar, ready for use. The beverage is made by putting a cupful of these crumbs into a coffeepot, pouring on a quart of boiling water, and letting the pot stand at the back of the stove for about half an hour.

Very few people make this kind of brown bread nowadays, but we may still have cereal coffee. If you have grain on the farm take equal parts of popcorn, shelled

rye, and wheat grains, roast them slowly in a pan in the oven until they are brown all the way through, keep the parched grain in tight jars, and grind in the coffee grinder just as you would coffee grains. A little practice will tell you just how much water to use to a cupful of the ground grain. Gentle boiling for half an hour gives a beverage of very good flavor. This homemade cereal coffee is less costly than the kinds that may be purchased.

**What is real coffee?** The coffee bean comes from a tree growing in tropic countries, which first came from Arabia. Now most of our coffee comes from Brazil, from Central America, and from the West Indies, although we still use the names Mocha and Java. The berries are cured and roasted before we grind them for making. Has your mother ever thought of buying green coffee by the bag from some wholesale firm and roasting it in a slow oven from time to time? If this seems too much trouble, she can buy good coffee, already roasted, from the wholesale dealer, for not more than 19 or 20 cents a pound. It is much better to buy it this way than ground in tins, for you will have a better flavor when you grind it just before using.

*Courtesy of the Bramhall Dean Co.*

FIG. 68. — A pot for boiling coffee and a pot for drip coffee.

Coffee contains two substances that are not especially good for us. One is caffeine, very much like the theine of tea, and the other is a form of tannic acid. While we may like the flavor of coffee boiled a long time, it is much better to boil it only a minute or two, or to make drip coffee. The long boiling draws out the harmful tannic acid. Also the liquid coffee should be poured off the grounds at once. Here are pictures (Figs. 68 and 69) that show the different kinds of coffeepots. In the "percolator" the water boils up through the coffee; in the drip coffeepot the water is poured on from above and slowly drips through the coffee grounds. *If you buy a percolator, the directions usually come with it.*

*Courtesy of Landers, Frary and Clark.*

FIG. 69. — A coffee percolator.

**Boiled coffee.**

*What.* Ground coffee, water, cold or boiling, white of egg or eggshell for boiled coffee. The coffee should be ground to medium fineness for boiled coffee; to a finer powder for the percolated and drip coffee.

*How much.* One part of coffee to 5 or 6 of water, depending upon the strength desired. One eggshell or half the white of an egg, to 1 cup of ground coffee.

*How to make.* Measure the coffee and water. Stir the white or the shell of an egg with the coffee, adding a little of the water. Put this into the pot. Add the remaining water *cold.* Stir thoroughly. Allow the water to rise slowly to

the boiling point and to boil one minute. Remove the pot from the fire. Pour in a small amount of cold water. Then let the coffee stand for five minutes or until the grounds settle. During the cooking close the lip with clean, soft paper, if the lip has no lid. The actual boiling is continued for a brief period only. Coffee made by this method is considered by some people to have a flavor lacking in drip or percolator coffee. The egg is added to clear the coffee. Pour off the liquid coffee from the grounds, and keep hot until it is time to serve it.

A *second method* differs from this in that the water is poured on at the boiling temperature, allowed to reach the boiling point in two or three minutes, and boiled for five minutes. The first gives uniformly better results. It is true, however, that different kinds of coffee need different treatment. There is room here for much experimenting.

**Drip coffee.**

*How to make.* In this method the coffee is put in the upper part of the pot, and the water passes slowly through, collecting below in the pot from which it is served. Stand the lower part of the pot in a pan of hot water, or where it will keep hot. Measure and bring the water to the boiling point. Heat the ground coffee slightly, put it in the upper section of the pot, and pour on the water very slowly. Of course the water is not actually boiling when it touches the coffee. If the liquid coffee is not strong enough, pour it from the lower part and pass it through the grounds again.

### EXERCISES AND PROBLEMS

1. Take one of the breakfast plans most nearly like the breakfast you have at home, and make several breakfast menus, writing in the names of the different dishes, as is done on page 147.

2. Look up the meaning of the word "menu."

3. Explain, as you would to your mother and father, why fat pork would be better for breakfast in winter than in summer.

4. When you are quiet, why do you need different foods from those when you are exercising all day?

5. Here is a question that you perhaps cannot answer yet; it will set you thinking. If you have slept out of doors, are you hungrier in the morning than if you had slept in a closed room all night?

6. Explain why coffee should be poured off the coffee grounds at once.

7. Why is drip coffee supposed to be less harmful than boiled coffee?

## Lesson 18

### Breakfast Cereals

Why are breakfast cereals a valuable food?

It is our custom to use a cereal [1] for breakfast, more often than at other meals. For this reason the name "breakfast food" is sometimes given to ground cereals. If we have learned to like these grain foods, we shall find them good for supper, and sometimes for the midday meal as well.

If you have read about life in Scotland, you know that oatmeal in porridge is one of the dishes on which the Scotch grow strong and efficient. Our forefathers found the American Indians using corn; and they themselves learned to grind the corn and to make the meal into "hasty pudding," or "mush," over the open fire, in a kettle hanging on the crane.

[1] "Cereal" is derived from the Latin word "cerealis," pertaining to Ceres, the Roman goddess of agriculture.

Nowadays, we use not only the oatmeal and corn meal, but many varieties of " flaked " and rolled grains, such as wheat, barley, and even rye. We raise rice in some of our southern states; this adds one more valuable food to the wealth of our supply.

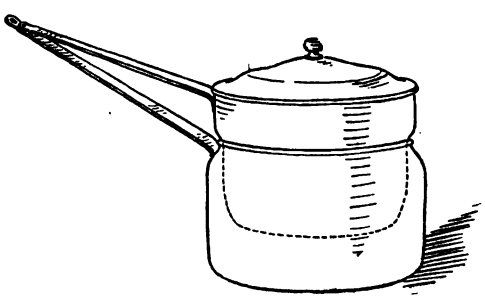
*Courtesy of Miss Jessie D. Ebert.*

FIG. 70. — Cooking a cereal at the Big Tree School.

**Why are cereals valuable to us?** Recall what was said about wheat in the lessons on bread, and you can answer this question. Ground cereals are easy to prepare for eating, and this makes them welcome in a busy home.

**Ready cooked cereals.** The ready-to-eat breakfast cereal is a quickly prepared food for the first meal of the day. A few of these are made in clean places, but they are sometimes manufactured from poor grain. The grit that we sometimes find, shows a lack of cleanliness in the process. It is a question, too, whether or not the starch has been heated long enough, and whether these prepared cereals can be chewed enough to make the grain digestible. It is better not to give them to young children. For older people, these prepared foods add variety to the diet, but they usually cost more than the home-cooked breakfast foods, even if one counts the cost of fuel.

**What happens to the cereal when we cook it?** Taste a grain of raw oatmeal, and you can mention several changes that the cooking makes. The raw grain is hard; the cooked grain soft. You notice a change in the flavor; and, when you look at the cooking oatmeal, you see that it is thickening as it cooks. Remember what we said about the starch in the potato, recall the way in which laundry starch thickens, and you can explain this change. These changes are brought about



*Courtesy of Ohio State University. From Extension Bulletin, Vol. IX, No. 4.*

FIG. 71. — A double boiler is used for steaming cereals. The lower part should be one third full of water.

by moisture, heat, and *time*. Our great-grandmothers made "hasty" pudding, but it is better for us to take plenty of time in cooking our grains. We find two kinds of cereals on the market, — the flaked and the granular. Weigh them, and you find the granular the heavier. Which will take more water? We need enough water to soften the cereal, but not too much. If the cooked cereal is very stiff, use more water next time; if it is too thin, use less water.

**Cooking cereals.**

*What and how much.* 1 part, by measure, of flaked cereal to 2 or 3 of water. 1 part granular cereal to 3 or 4 of water. 1 cup of dry cereal will serve three or four people. Samp, cracked wheat, and coarse corn meal will take from 4 to 6 parts of water. Salt. A tablespoonful to a quart of water is an average amount.

*Utensils.* A measuring cup; a double boiler; a fork.

A picture of a double boiler is shown in Fig. 71. Or you can set one saucepan into another larger one, putting something in the bottom for the smaller pan to stand upon.

*How to make.* Measure the cereal and water; put the water into the inner part of the double boiler with the salt. Have the lower part of the boiler ready, about half full of hot water; place the inner boiler directly upon the stove or over the flame. When the water is boiling rapidly, shake the cereal into the water from a cup *so slowly that the water does not stop boiling.* This is the first secret of a well-cooked cereal. The rapidly boiling water keeps the grains of cereal in motion. Thus they do not stick to the vessel nor to each other, and the heat reaches the starch in the grains equally.

If the grains begin to settle, shake the vessel gently; but do not stir, even with a fork. Do this for about five minutes, or until you see a thickening of the mass, — so much that the separate grains do not settle. If toward the end of this stage there is danger of sticking, *lift* the mass with the fork, but do not stir it, as stirring will break the grains. This first process opens the starch grains. Place the inner part of the boiler in the outer part over boiling water and allow the cooking to continue for *at least* one hour. For this is the second secret of the perfect cereal, — a long cooking that softens the fiber and develops flavor. One cereal, advertised as being cooked in three minutes, is hardly eatable after that length of time, but is delicious at the end of two hours. If you have a fireless cooker, put the cereal, in the double boiler, into the cooker overnight for the second stage.

**The uses of cold cereal.**

Never throw away cooked cereals. The cold cereal is useful in many ways.

(*a*) Mold in small cups with dates or other fruit, and serve with sugar and cream for supper, — or for luncheon at school.

(*b*) Cool corn-meal mush in a flat dish, cut it in slices when cold, and brown the slices in a frying pan with beef fat, or a butter substitute. Serve with sugar, molasses, or sirup for breakfast or supper.

(*c*) Rice or hominy may be mixed with a beaten egg, molded into small cakes, and browned either in the frying pan or in the oven.

(*d*) A small remaining portion of any cereal may be used to thicken soup.

(*e*) Any cooked cereal may be used in muffins or even in yeast bread.

**Using Indian corn.** As Americans we should be very proud of our Indian corn. The early settlers found it grown by the Indians. We have improved it, learned how to cultivate it, and made it one of our great crops. Have you heard of the " Corn Clubs," for boys and for girls, too? Do you know that the same grain is found in other parts of the world, where the sun is hot enough to ripen it? It grows in South America, and it is an abundant food in Italy, where the people make a delicious porridge, " polenta." What is there more beautiful than a field of waving corn? It might well be planted for its beauty in the flower garden, as it is sometimes in England.

**Corn products.** You can make a list of the different kinds of corn and some of the corn products, can you not? Sweet corn, popcorn, and field corn, yellow and white. The cattle would call the stalks or leaves a corn product. The poultry like their corn whole sometimes. We prefer meal, or hominy, or samp. Have you ever heard of " hulled corn "? This was much used in early days. The hard ripe kernels were soaked in a weak solution of lye (wood ashes) until the " hull " came off, and then the whole grains were cooked.

**Something more about corn meal.** We have two colors in corn meal, yellow and white. Some people prefer one and some the other. There are also two ways of grinding: the old method, between stones; and the new process, by rollers. The old method seems to give a better flavor, because the oil of the germ is in

the meal; but the new process meal keeps better. All the old-fashioned rules for cooking Indian meal have to be changed for the new kind, as the latter needs more wetting and more fat added. Perhaps you know where your meal is ground, and can tell if it is new or old fashioned. If it comes in a box with a label, it is *probably* new process.

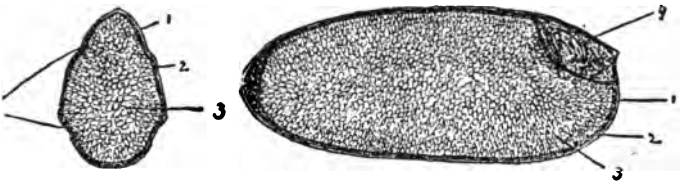
**Corn or Indian meal mush.**

*How to cook.* This is cooked by the same method as the other cereals, except that the amount of water is larger and the first boiling should continue longer. The meal must be scattered slowly into the boiling water, or else be mixed first with cold water, as it lumps very easily. The second stage of the process should continue several hours.

**A word about rye and rye meal.** We Americans are forgetting to use rye as our forefathers used it. This is a great pity. Rye is a most wholesome grain, ground into meal and made into "mush." Mixed with corn meal it gives us delicious yeast bread and quick breads. If rye is raised in your neighborhood, do supply yourselves with rye meal, and use it. Rye flour is easier to find for sale than rye meal, but it cannot be used in quite the same way. The rye flour will make a yeast bread.

**Cooking rice.** Rice varies very much in quality and in the shape of the grain. Louisiana and Chinese rice are among those that have a firm and large grain, keeping its shape well when cooked. Inferior varieties

become too soft, and the finished product is pasty and poor in color and flavor. Much is said at present about




*From Hart's "Cereals in America." Published by the Orange Judd Company.*

FIG. 72. — Sections of a rice kernel: 1, bran coat; 2, aleurone layer, containing valuable mineral salts; 3, cells packed with starch grains; 4, germ, containing fat and mineral matter.

the harmful effect of the polishing process upon the quality of the rice. An unpolished rice may sometimes

*Courtesy of New York College of Agriculture at Cornell University.*

FIG. 73. — Pure food regulations require the dealer to label coated rice.

be found on the market, brownish in color and with a good flavor.

**Boiled rice.**

Rice may be cooked in the double boiler by the same method as other cereals, by allowing 1 part of rice to 3 of water. The rice should be well washed in cold water.

It will cook in from three quarters of an hour to an hour. Use milk sometimes in place of half of the water.

The Chinese cook their rice in this way. A very large amount of water is used, — several quarts for one cup of rice, — and when the water is boiling violently the rice is scattered in very slowly. The boiling continues from twenty minutes to half an hour, or until the grains are tender. Then the water is drained off through a colander. The rice in the colander should then be placed where the remaining moisture will steam off. By this method some food value is lost, but the grains of the rice stand out distinctly and are light and dry. The grains should be tested after boiling twenty minutes to see if they are tender.

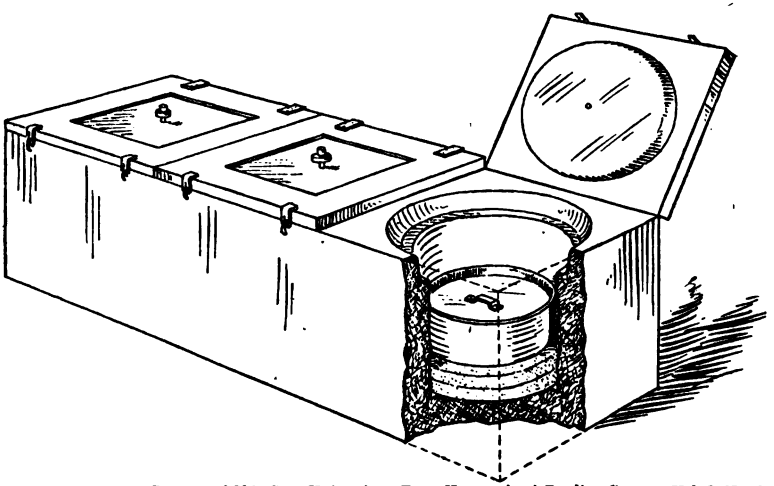
*Fruit and rice or other cereal.* When the rice is cooked in the double boiler, add a handful of stoned raisins and cook with the rice, or add a few soaked prunes cut in pieces.

One morning Barbara Oakes tried putting raisins with the oatmeal. Once after she had been blueberrying she put some berries into the breakfast food to surprise the family. Suppose you try some other berry. Look back at the lesson on fruit and see what else might go into the hot cereal.

**Eating cereal.** We should eat our cereal slowly, instead of bolting it. An easy way to make oneself do this is to eat it with toast or a cracker.

**When shall we cook the cereal?** On account of the fact that cereal should be cooked a long time, it is best

not to wait until morning to cook it. In winter, when the fire is kept in overnight, the first cooking can be done at supper time, and the boiler left standing on the range or stove, at the back. In summer, the cereal



*Courtesy of Ohio State University. From Homemakers' Reading Courses, Vol. I, No. 8.*

FIG. 74. — The breakfast cereal may be cooked overnight in a fireless cooker. This cooker is fitted with valves which permit the escape of steam, and prevent water from condensing in the cooker.

can be thoroughly cooked the day before, and reheated at breakfast time. There are still other ways. Have you ever heard of the fireless cooker and the Atkinson cooker? We shall study these in another lesson.

### EXERCISES AND PROBLEMS

1. Weigh a cup of flaked cereal and a cup of granular.
2. Make a list of the flaked and granular cereals, that you know about, with the amount of water for each one.

3. Does anything in your study of physiology explain why you should eat the cooked cereal slowly?

4. How much corn meal shall you need to make mush for a family of six? Of eight?

5. Weigh the contents of a box of ready-to-eat cereal. Weigh the same measure of oatmeal; of corn meal; of rice.

6. Which is the least expensive? Can you tell why?

7. Mollie Stark used one of the recipes in this lesson with a foamy sauce for dessert at dinner (Lesson 13). Which one did she select?

## Lesson 19

### The Value of Eggs as a Food

WHAT is there for you to learn about selling eggs and about using them at home?

It may be that you help your mother in raising poultry, and sell the eggs; and, of course, you have enough for home use, anyway.

**Eggs for market.** There are many pamphlets printed about poultry and eggs for profit. You may have read about the Poultry Clubs in some of our states, and perhaps you are a member. Some of these pamphlets are kept on the book shelves at the Pleasant Valley School, and the pupils try at home some of the plans suggested. The important things for poultry are a clean house, clean drinking water, good food, litter to scratch in for the winter, a "run" for good weather and for summer, fresh air, and dry feet. In a tightly shut henhouse we cannot have healthy hens that will lay. They need fresh air, but, as their bodies are about eight degrees

hotter than ours, they do not need to be kept warm. The food that hens require is very much like our own; grain, some meat food, green stuff, plus something to make the eggshells hard. If you want the eggs to

*Courtesy of Miss Laura B. Whittemore.*

FIG. 75. — Miss Field and her flock of White Wyandottes.

have the flavor that customers call "perfectly delicious," you must be careful to give them no table scraps that have a strong flavor. Miss Field, the young woman in Pleasant Valley who sells eggs, never gives

table scraps to her laying hens. She feeds the scraps to the cockerels that will be sold for broilers.

**Selling fresh eggs.** Miss Field is very careful to send only fresh eggs to market. Her commission mer-

*Courtesy of Miss Laura B. Whittemore.*

FIG. 76. — Beauty Bright. The openings in the houses are closed by shutters covered with heavy cotton cloth.

*Courtesy of Miss Laura B. Whittemore.*

FIG. 77. — Jack, one of Miss Field's cocks, with his well-ventilated house at the back.

chant wrote her that he never tested her eggs because he could depend upon them.

The Woman's Club asked Miss Field to give a talk about her poultry raising because they knew that she was practical, and that she made it pay. She warned them about taking batches of eggs of all ages to the store, and reminded them that when we buy eggs we do not

like to find an old or a cooked egg or a small chicken, at thirty cents or more a dozen. Miss Field said that, if there were eggs that did not hatch in the incubator, she always opened them, and used them at home if they had not spoiled; but that she would never think of selling them. She also said selling direct to the consumer paid her better than selling on commission.

Eggs should be stored in a cool place, and on the way to market should be kept out of the sun. The picture (Fig. 78) shows that the weather is hot, because the family is using an umbrella, but there is none over the eggs!

Another important point is a clean nest for the hen. The shell of the egg is porous; so, if we wash off the dirt, we may hasten the spoiling of the egg. See if you can reason this out.

Here is one odd little point about selling eggs that Miss Field mentioned. In some places white eggs bring a higher price; in some cities, brown. You must find out about your market, and choose the kind of hen to suit. In New York City white eggs always are quoted higher than brown, and cost more at the grocery; although, when you sell direct to a customer, it does not seem to matter.

**The cost of eggs.** When we raise our own food it is not easy to know just what it costs in money. If we count as the money value of eggs what we can get for them, that will help us to compare them with other food, at least, and to judge whether to eat all or to sell

them, or to eat some and sell some. Of course, they do take the place of ready money sometimes, and so

*U.S. Department of Agriculture, Bureau of Animal Industry. Bulletin 141.*

FIG. 78. — Taking eggs to market. Eggs exposed to the sun during an eight-mile drive at a temperature of 106°.

we change them for some other kind of food. The question is, whether we do this wisely, always.

Remember that the food value is as follows:

8 eggs = 1 quart good milk = 1 pound steak, *about.*

If the eggs are 24 cents per dozen, and the steak 24 cents per pound,[1] what food value is lost if you change the eggs for the steak? Do you see what money value is lost, as well? Of course, the change gives you variety. On the other hand, when good eggs bring a high price, it is to your advantage to sell, and use fewer in cake and puddings at home. We must remember that cooked by themselves, and served in place of meat, they are valuable, especially for little children and invalids.

**Food value of eggs once more.** Remember that as the tiny chicken grows inside the shell, its food is there, with something taken from the shell in the way of mineral matter; and the baby chick comes from its shell, quite well grown, with energy enough to pick for its next meal. Eggs are one of the body-building foods, and for this reason are good for growing children, invalids, and people who are getting well, and who have lost flesh.

**Are hard-cooked eggs digestible?** Yes, if eaten properly, an egg, hard boiled or fried, is digestible. You need not be afraid to serve fried eggs; but you must remember that the hard egg and the egg with fat will take *longer* to digest. So, if some one at home has a rather feeble digestion, a soft or raw egg is better than the fried; and better for the little children.

[1] Prices of steak per pound in a country village, Connecticut, August, 1915: Shoulder steak, 18 cents; round, short, and sirloin, 24 cents; porterhouse, 32 cents. "Western" beef.

**What happens to an egg when it is cooked?** If you break an egg into a saucepan of cold water, and heat the water slowly, what changes can you see in the egg? Try it and see. There comes a change in color, first, in the white of the egg, before the water boils at all; and when the water boils, the yolk and white become hard. If you leave the egg long enough in water below the boiling point, both the yolk and white harden, the yolk being "mealy" and the white firm so that it can be cut. *The cooking does not change the food value of the egg.*

What do you gather from this little study of the cooking egg?

If you want an egg to be jelly-like, it must be cooked below the boiling point of water. If you like it firmer, cook it in boiling water, without being afraid that it will be indigestible. This is the latest advice from scientific people.

**Beating eggs.** How convenient it is that the white of egg is elastic, and that we can stretch it by beating, and can catch the air in it, and use the air for making muffins and cakes "light." The yolk becomes creamy; a bit of yolk in the white will keep the white from being stiff. Can you break an egg and drop the white in a bowl without a speck of the yolk?

There is one other important point about the yolk and the white. Do you know how the yolk hangs in the shell? By a string. Look for the string. Do you know why the hen turns the egg over? If the egg lies

on one side, the yolk drops. If the egg is shaken, the string breaks, and so when we send eggs by mail or express they must be firmly packed.

**Some other materials to be used with eggs for breakfast and other meals.** We have spoken of dried beef in Lesson 17. If the meat for hash is rather too small in quantity, put the chopped meat with some bread crumbs in the bottom of a baking dish, break enough eggs to cover on top of the meat, and set the dish in the oven. Eggs can be made into dishes with potato, or bread or bread crumbs, with cold meat, fish, and cheese. Look back at the lesson on scalloped dishes, and plan an egg scallop for breakfast or supper, with what you have left in the house from dinner.

**Eating raw eggs.** A good quick lunch. An egg, swallowed whole, followed by a cracker, is a "quick lunch" that is wholesome; and it is sometimes convenient to be able to take an egg in this way. A sprinkling of salt upon it makes it taste better.

**Whipped eggs.**

*What and how much.*

1 egg
1 teaspoonful of sugar
a shake of salt
some flavoring
¾ cup of milk

*How to make.* Beat the yolk and white separately. Add to the yolk a teaspoonful of sugar, a shake of salt, some flavoring, and ¾ of a cup of milk. Beat the white gently

into this mixture and serve in a glass. The flavoring may be a quarter of a teaspoonful of vanilla, or a tablespoonful of orange juice. This is sometimes served to an invalid who can take milk, and is an agreeable luncheon for any one. If milk does not agree with one, a larger amount of fruit juice may be used with the addition of some water, possibly carbonated. The white alone is given in cases of severe illness, mixed with a small amount of water and fruit juice, if the physician permits the latter. This is sometimes the only food that can be retained by an invalid.

**Jellied or coddled eggs.**

See that the shells are whole and clean. If the eggs are just taken from the refrigerator, lay them in warm water a few minutes. Make ready a double boiler, with the lower part half full of boiling water. Put the number of eggs that you wish to use into the inner boiler. Cover with water that has just stopped boiling. Put on the boiler cover. Stand the boiler where the water below will no longer boil. The eggs will be done in from six to eight minutes.

See if you can think of another way of doing this same experiment.

**Boiled eggs.**

Put one egg at a time from a tablespoon into boiling water. Allow the water to boil for three or four minutes, depending upon the preference of those served. Remove the eggs, and serve at once.

The *hard*-boiled egg should remain in the boiling water half an hour.

**Poached eggs.**

Make ready a frying pan by setting muffin rings in it and filling it about half full of gently simmering water, with a

teaspoonful of salt dissolved in it. Break the eggs one at a time into a saucer, and slip each egg carefully into a muffin ring. See that the pan stands where the water is just below the boiling point, for rapidly bubbling water breaks the eggs. When the white begins to set, pour the hot water gently over the tops of the eggs from a spoon. Cook until the white is firm. Slip a griddlecake turner under the egg, lift it gently, and place it upon a piece of buttered toast which you have ready on a hot plate or platter, and remove the ring.

An easier method, resembling the poached egg, is to break the egg raw into a small buttered cup or "patty," standing the cups in a pan of water just below the boiling point, the pan being on the top of the stove or in the oven. Each egg should have a sprinkling of salt, and may have a bit of butter, and a shake of pepper. Cover the pan. This process is longer than the other, and the eggs must be watched to see when the process is complete.

**Baked eggs.**

This has already been suggested with chopped meat. The eggs can be baked with bread crumbs only, in a buttered baking dish with crumbs underneath and above. Sprinkle on some grated cheese before baking, or lay on thin slices of cheese, and you have a "hearty" breakfast dish.

**Preserving eggs for winter use.** When the hens are laying well, and eggs are cheap, it is a good plan to store away some for use later. Since the shells are porous, eggs take the taste of sawdust or of anything in which they are placed that has a taste or a smell. For this reason we must coat eggs to keep them.

Even in cold storage, eggs change flavor after a while; and, of course, we never sell preserved eggs as fresh eggs. The easiest way is to pack the eggs down in coarse salt, but *water glass* is the better preservative.

Buy the water glass at the druggist's. With it make a mixture with water, one tenth water glass to nine

*Courtesy of Katherine E. Braithwaite.*

FIG. 79.— Sallie and her White Wyandotte babies.

tenths water. Use large stone jars. Fill the jars with the eggs, selecting those without cracks; pour the solution over them; cover the jar, and set it away in a cool place. This costs only a fraction of a cent for each egg. The eggs when taken out must be thoroughly washed before cooking. The flavor is good, but it is dishonest to sell them as fresh-laid eggs.

EXERCISES AND PROBLEMS

1. What do you know to be good for your poultry at home?
2. Why is it necessary to coat or cover eggs in order to preserve them?
3. Compare the cost of eggs and meat in your town, and see which is more economical to use.
4. Do you know how to "candle" eggs, and what does the candling show?
5. Can you explain to any one who asks you the difference in digestibility between a raw egg and a hard-boiled egg?

## LESSON 20

### QUICK BREADS

How can we make and serve quick breads?

"Quick" breads may be mixed and baked the day before, and warmed over for breakfast.

Quick breads take less time in the making than yeast bread. Then, too, we like a change in our bread foods. Mollie Stark's grandmother could remember seeing baking done in the brick oven once a week. A fire was made inside the oven, the ashes were swept out when the fire died down, and the food was cooked when the bricks or stones of the oven had cooled a little. Cake and pies were baked first; then, white bread; and last of all the brown bread, beans, and Indian pudding were put in, to be taken out for Sunday morning breakfast. (Frontispiece.) This baking was an important event and took all day; enough cake, pies, and bread were baked for a week. How convenient, then, between times to

bake johnnycake or hoecake on a board before the open fire, or to make quick biscuit with sour milk and saleratus and to bake them in the bake kettle that stood over the glowing coals with other coals of wood put on top of the iron cover. Mrs. Stark, the grandmother, was delighted when Miss James asked her one day to show the cooking class how to make a johnnycake like that she used to eat in her old home in Rhode Island. There they use white corn meal, as people are likely to do in the South, and the johnnycake is something like the southern hoecake. The class went one afternoon to the pleasant old homestead, where the grandmother was one of the happiest and busiest members of the household. Mrs. Stark explained that the name johnnycake is given to different corn-meal breads in different places, and that she is always careful to explain that hers are:

**Old-fashioned Rhode Island johnnycakes.**

*What.* White (or yellow) corn meal, *boiling* water, and salt.

*How much.* Mrs. Stark says that it is of no use to try to give exact measures, because different kinds of meal take up different quantities of water. There must be enough water to soften the meal so that it will drop from a large spoon, but not run out.

*Utensils.* A bowl and spoon, and a *griddle*, with a broad knife for turning the cakes.

*How to make.* Mix the salt with the meal in the bowl. Pour on the boiling water. Mrs. Stark poured it from the teakettle, but said that you could pour it from a saucepan. She stirred the meal with one hand, holding the kettle in the

other, pouring on the water until the meal was all softened but not *very* wet. Perhaps you can find somebody's grandmother to show you how.

The griddle was hot and greased with beef fat.

Mrs. Stark dropped a large spoonful at a time upon the hot griddle, and with a knife made each cake into a smooth oval about ½ inch thick. She let the cakes brown on one side and then on the other. Then she set the griddle on the back of the stove, where the cakes would cook slowly. At the end of about half an hour, each cake had two crisp, brown crusts, easily split apart with a knife, ready to be buttered and eaten. While the cakes were cooking, Mrs. Stark told stories of old days; and, when the cakes were eaten, the girls all declared that they were sweeter and better than popcorn, and that they couldn't be better baked on a board; but Mrs. Stark insisted that they were. She explained that the johnnycake is more digestible than a more quickly cooked griddlecake, on account of the longer cooking.

**An exhibit of quick breads.** Miss James suggested that the Pleasant Valley School should have an exhibit of their home work, and that muffins and biscuits, among other things, would keep fresh long enough to look well. Here are a few of the rules that they used for their quick breads:

**Popovers or puffovers.**

*What and how much.*

| | |
|---|---|
| Flour | 1 pint |
| Milk | 1 pint |
| Eggs[1] | 3 |
| Salt | ½ teaspoonful |

[1] Some rules give two eggs only.

*Utensils.* *For baking,* heavy earthen cups, hot and greased.

*How to make.* Sift together the salt and flour. Stir together the milk and eggs. Pour these slowly into the flour, stirring and beating as you go.

*Special points.* The liquid must be poured *very* slowly into the flour to prevent lumping. A large Dover egg beater is convenient for beating out lumps, if any occur.

It is the steam formed in baking that lightens the puffovers, and the mixture should be stirred only long enough to make it smooth. The mixture can stand overnight, and still make light puffovers in the morning.

Pour the batter in the hot cups, having each cup two thirds full. For baking, the popovers should be put into an intensely hot oven for the first stage of the baking — and then the oven must be cooled. This first stage crusts the top; then the force of the steam pushes up the top; and the muffin "pops" or "puffs" over. The more moderate heat cooks the sides and the bottom, and makes an agreeable crust. The perfect puffover is hollow. Three quarters of an hour is the average time of baking. If at the end of that time the oven door is set ajar, and the popovers allowed to remain longer, they are improved, coming from the oven stiff and crisp with a rich brown color, rather than soft and underdone. Serve sometimes with a pudding sauce as a dessert, or open and fill with stewed fruit.

**Muffins.**

*What and how much.*

| | |
|---|---|
| Flour | 1 pint |
| Baking powder | 3 teaspoonfuls |
| Salt | ½ teaspoonful |
| Eggs | 2 or 1 |
| Milk | 1¼ cup |
| Butter *or* butter substitute | 1 tablespoonful |
| Sugar, if desired | 1 tablespoonful |

*Utensils.* For baking use greased muffin pan. Bake half an hour.

*How to make.* Sift together the dry ingredients. Beat the eggs, without separating the yolk and white, and stir the eggs and milk together. Pour the liquid gradually into the flour, first stirring, then beating. Melt the butter or other shortening, and beat it into the batter.

This recipe may be varied in many ways:

(*a*) Use ½ cup cooked cereal in place of an equal quantity of flour.

Will you change the amount of wetting?

*Courtesy of Department of Foods and Cookery, Teachers College, Columbia University.*

FIG. 80. — A plate of muffins for breakfast or supper.

(*b*) One cup fine white corn meal, or ½ cup yellow meal, may be used in place of equal quantities of flour. Corn meal absorbs more water than white flour.

What change in the wetting?

The oven should be the temperature for bread, and the baking at least ¾ of an hour.

(*c*) One cup graham or rye meal may be used in place of an equal quantity of flour.

**Baking powder or sour milk and soda biscuit.**

*What and how much.*

| | |
|---|---|
| Flour | 1 pint |
| Baking powder | 3 teaspoonfuls |
| Salt | ½ teaspoonful |
| Butter *or* butter substitute | 1 or 2 tablespoonfuls |
| Milk | 1 scant cup |

If you use sour milk and soda, take a scant teaspoonful of soda.

*Utensils.* For shaping, use molding board, rolling pin, and biscuit cutter.

For baking, use an iron sheet or pan sprinkled with flour. Test the oven with a ten-second count or golden brown paper, in five minutes. This would be about 425°F. Bake from twenty minutes to half an hour.

*Courtesy of Department of Foods and Cookery, Teachers College, Columbia University.*

FIG. 81. — A plate of baking powder biscuit, light and baked well.

*How to make.* Sift together the dry ingredients. Cut in or chop in the butter. Add the wetting slowly.

*To shape.* Dust the board with flour, turn out the dough, dredge with flour, pat into a firm mass, and then pat or lightly roll out to ½ inch thickness. Cut out with a cutter dipped in flour. (A small glass or the top of a round tin can may be used.)

It saves time to mix the biscuit soft enough to drop from a spoon.

*Variations.* Add 1 egg. This makes a delicious biscuit. Sprinkle the top with granulated sugar, and spice. Dried currants, washed and dredged with flour, may be laid on the top.

Increase the butter to two or three tablespoonfuls and decrease the wetting; the mixture becomes *shortcake*. This is the mixture to use for the true strawberry shortcake. Many other fruits may be used, both uncooked and cooked.

The class had learned how to grease their muffin pans and cups neatly, to fill each little pan or cup half full, and to bake them in a quicker oven than for loaf bread.

A table for baking will be found on page 296.

We shall not learn to bake properly until we have thermometers for our ovens; no other test can be exact. A good general rule in baking is this: with batters and doughs, the larger the portion, the slower the oven. A cooky can be baked in a "quicker," or hotter, oven than a muffin, and a muffin or small cake in a quicker oven than a loaf. Cakes that have many eggs in them, like sponge cake and angel cake made only with the whites, are more tender baked in a slow oven. The reason for this you will understand because we have studied the egg in Lesson 19.

On the day of the exhibit the quick breads were prettily displayed upon plates on a long table, and the recipes were written on the board. Miss Travers was there; but before she began her talk, the pupils themselves performed the experiments given in Marjorie's notebook, page 298, and gave little talks themselves about baking powder. One girl talked while another performed the experiment, and what they said was something like this:

**Making quick breads light.** We can do this, partly, by beating air into eggs and putting the eggs into the batter. In popovers the steam puffs up the crust. But why do we use sour milk and soda, or molasses and soda, or cream of tartar and soda, or baking powder?

Agnes Groves will pour some boiling water on a mixture of cream of tartar and soda. See how it bubbles! If we catch the gas in a small bottle and touch a match to it, see, — the match goes out. It is carbon dioxide gas. Here is a saucer that held a teaspoonful of cream of tartar and ½ teaspoonful of soda dissolved in water, and the water has evaporated. See the white powder left behind. It does not taste like the cream of tartar nor the soda; and you could never guess what it is! It is Rochelle salts; and so every time we eat a biscuit made light with cream of tartar, we take a little dose of Rochelle salts.[1]

This is what the chemists say: whenever you put soda, or bicarbonate of soda, with an acid, this gas is formed, and some substance is left behind in the food, — one kind of thing from sour milk, another from cream of tartar, and so on. Some of the best baking powders are made with cream of tartar and soda with a little starch mixed in to keep the two substances from working on each other. An acid phosphate powder also is on the market.

The Mothers' Club and other guests were much pleased with the little talks and the experiments. Then Miss Travers was ready to answer questions. Here are a few of them:

*Question.* What kind of baking powder would you buy?

*Answer.* Not the cheapest, for they may have alum instead of cream of tartar, and too much starch or flour.

[1] Rochelle salts is a medicine.

*Question.* Is it cheaper to buy or to make the baking powder?

*Answer.* It may cost a little less to make it, but in the factory, where it is put up, everything is weighed exactly and thoroughly mixed; you get a better product and it is just as economical.

*Question.* Isn't quick bread just as wholesome as yeast bread?

*Answer.* Not when it is eaten just baked, and not for all the time.

*Question.* But people always want quick breads hot. What can you do?

*Answer.* Try reheating them. This makes the crust a little crisper, and the crumb drier, and less pasty to be digested. Then, this saves work at the time of the meal, often. If they seem too dry, moisten the crust a little before reheating in the oven.

*Question.* I used some canned molasses with soda for my gingerbread, and the bread was heavy. What was the matter?

*Answer.* Canned molasses has no acid in it, and you should use baking powder with it.

The exhibit was ended by serving the quick breads and simple cakes with cocoa for refreshment. Some of the biscuits were used for little shortcakes; that is, were split and filled with some fruit that the girls had canned. Thin baking-powder biscuit make very nice sandwiches to serve at any entertainment.

### EXERCISES AND PROBLEMS

1. Try the experiments on page 298.
2. Explain how baking powder makes a batter light.
3. Explain why puffovers *do* puff over.
4. Make tests with pieces of white paper, and paste them in your cook book, with the time against each one.
5. Explain why an oven for cookies can be hotter than for a loaf.

## Lesson 21

### The Kitchen

**How can we make the kitchen comfortable and pretty, pleasant to work in for breakfast, dinner, or supper?**

One warm, pleasant day, when the girls' club had its meeting at Marjorie Allen's home, one of the members who went into the kitchen to help make the lemonade, exclaimed:

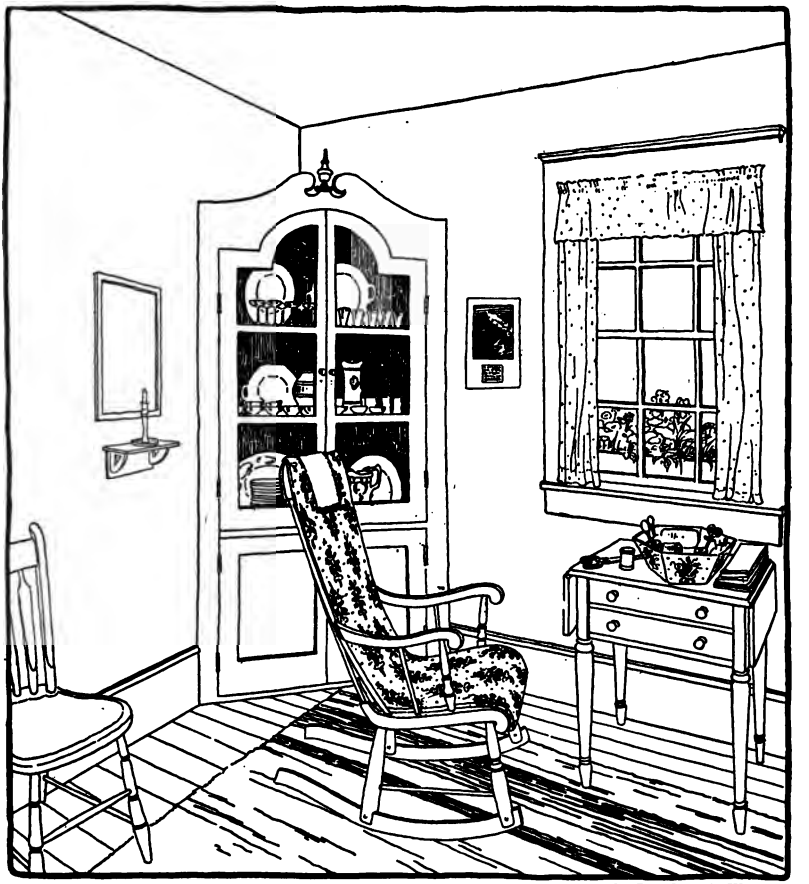
"Isn't this the pleasantest room in the whole house?"

Is our own kitchen at home so comfortable and attractive that our friends can say something like this?

The Pleasant Valley girls had the chance to furnish a kitchen, beginning with the walls and floor, in the Ellen H. Richards House (page 289); but at home we seldom can do so much as this. However, if we have a plan, we can do one new thing at a time, and make changes slowly. If our kitchen is small, it saves steps; if it is large, it is airy; and in either case we will make the best of it.

**"May-haves" and "must-haves" in the kitchen.** We *may have* the kitchen pretty and we *must have* it clean; and it ought to be convenient in saving steps and in making the work easier to do.

**A pretty kitchen.** Marjorie Allen persuaded her mother to let her help plan the doing over of the kitchen. They put a soft shade of buff paint on the wall, because paint is cleaner than paper; and the



*Drawn by La Mont A. Warner.*

FIG. 82. — "Isn't this the pleasantest room in the whole house?" A corner of Mrs. Allen's kitchen.

floor was painted brown. Mrs. Allen had made a braided mat, in the winter days and evenings, of soft brown and buff with a touch of blue in it. There was a

*Drawn by La Mont A. Warner.*

FIG. 83. — Another corner of Mrs. Allen's kitchen. Mrs. Allen made a braided mat in the winter days.

dull blue-and-white cushion in a rocking chair, and some old-fashioned blue-and-white dishes on the shelf. The window shelf at the south window held some plants; and they planned to have a vine outside this window for shade in summer.

**A clean kitchen.** In speaking of beauty, we are not able to leave out the thought of having things that are easily cleaned, you see. A woven "rag," or braided, mat can be taken outdoors, scrubbed with a brush and soapsuds, and rinsed with clear water thrown on from a pail or hose; or can be washed in a tub.[1] It is a good rule to have nothing in any part of the kitchen that is not washable.

*The floor.* It may be smoothed off, and painted or oiled. A floor covering that is expensive at first, but that lasts for many years, is an inlaid linoleum or cork carpet; it is warm and soft to the feet, keeps out damp, and is easy to keep clean. This is something for which to save up money, if you believe in cleanliness and comfort. Begin with having it in the pantry. Let it lie on the floor to stretch from use for a month or two; then cement it along the edges. This ought to keep out mice and ants.

*The walls.* Paint is the very cleanest and best finish. It costs less in the end than paper because it lasts longer.

*The sink.* Whatever the sink is made of, have it open underneath. This is the only way to be sure that

[1] Rag rugs and strips are in fashion again. Mollie Stark's grandmother makes them for her friends.

it is really clean around the sink. If there is a closet underneath, it may be damp, and we may " tuck away " things, and then feel too tired to clean the closet out.

Here is a picture (Fig. 84) of a sink hung from the wall. This is made of enameled iron. If the sink is hung in this way, it can be placed high enough so that Mother's back is in proper position. On page 136 is a

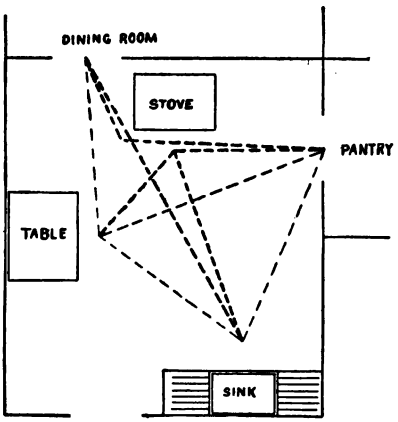
*Courtesy of J. Mott Co.*

FIG. 84. — An enameled iron sink hung from the wall.

picture of a sink that is too low. When the sink rests upon legs, these come of a standard height, inconvenient, and harmful for tall people. If you have a wooden sink, plan to change it for something else as soon as you can. Plain iron is better than wood.

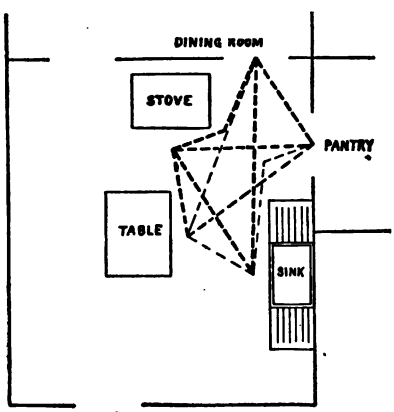
**Saving steps.** One day, after school, Marjorie Allen with a foot rule in her hand began to follow her mother round the kitchen, measuring her footsteps behind her, instead of helping with the supper as usual. Then she

drew a plan of the kitchen, with lines to show where and how far her mother walked in getting supper, like Fig. 85. Mrs. Allen was amused at first, but, when Marjorie told her how many miles she traveled a year, she was interested; and after supper, they all sat down to calculate what could be saved by changing some things in the kitchen. All the girls had been reading at school the bulletin about the Home Kitchen;[1] and, although Miss James warned them not to trouble their mothers that night by turning the kitchen "topsy-turvy," they could hardly wait until Saturday to try some change. See if you can save steps by changing movable things about at home; of course, if your mother is willing.




*U. S. Department of Agriculture, Farmers' Bulletin, No. 607.*

FIG. 85. — A large kitchen with inconvenient arrangement.




*U.S. Department of Agriculture, Farmers' Bulletin, No. 607.*

FIG. 86. — The same kitchen has been improved.

[1] See U. S. Department of Agriculture, Farmers' Bulletin, No. 607.

**A kitchen cabinet.** You are fortunate if you have a large and well-aired pantry for keeping food; but it saves time and strength to have some materials at hand all the time.

When Marjorie began to talk about buying a cabinet, her brothers decided to make something that would do nearly as well. Figure 83 shows what they did in the way of putting shelves around the kitchen table. The flour and sugar are near by, you see; and all the little things, too. Then they put casters on another smaller table, and nailed on strips of wood around the top. This was for running dishes and food in and out of the dining room, kitchen, and pantry; for their rooms were large.

**Cooking utensils.** For good work you need a few well-selected utensils. Enameled ware and aluminum are among the more expensive kinds, but both are serviceable. Steel or iron are materials that wear well and are useful in frying pans especially. There is nothing better than a well-worn iron spider which has become perfectly smooth from years of use. If you have one of these that you think of throwing away because the under part is encrusted with a black covering, give the pan a thorough boiling in a solution of lye, washing soda, or soft soap, and then keep it among your kitchen treasures.

**Water in the kitchen.** John Stark said on another day: "Father, I want to talk to you seriously. What would you think of going without the addition to the barn another year, and having a force pump in the cellar

*Courtesy of New York State College of Agriculture at Cornell University.*

FIG. 87. — For good work you need a few well-selected kitchen utensils.

so that mother can have hot and cold running water in the kitchen, and we all can have a bathroom?" What do you think his father said? He was a little doubtful about the school where they studied such things; then he remembered that at the Farmers' Institute he had heard another farmer talk about just this thing. And what did he do? He wrote to the State University and asked for advice about water on the farm. They gave him some practical help, and now the Stark home has a good water supply.

Running water, what a blessing! If you have a spring of good water on high land and the water can be piped into the house, you are wealthy. Sometimes, several neighbors can do this together. Happy is the

small town that has a pure supply and can pipe it into the village!

What are some simpler methods that can be used on the farm?

Here is a drawing (Fig. 88) of what one family did in Pleasant Valley. When crops fail, and business is poor, we cannot put in expensive waterworks. As the water in the Groves' well was a little hard for washing, they always had rain barrels for water from the roof, being careful to let the rain wash off the roof before it was turned into the barrels. This picture shows what Mr. Groves devised one day when the family was talking about saving steps. He ran a short pipe into the kitchen from the barrel, with a spigot on the kitchen end of the pipe. The pipe was arranged so that the barrel could be taken off and down to be cleaned. Also there was a netting over the top of the barrel. Why? To keep out mosquitoes, of course. This plan does not work in a very dry summer, but Mrs. Groves found it a help, and so she had another one put by the shed where the washing was done in warm weather. The next step was

*Drawn by La Mont A. Warner, Teachers College, Columbia University.*

FIG. 88. — Mr. Groves put up a rain barrel to catch water from the roof, and ran a short pipe into the kitchen from the barrel.

a cemented rain-water cistern, with a pump in the kitchen.

**A tank in the attic.** More convenient still is a water tank in the attic, with a good hand pump that pumps the water from a well or cistern. One tank of this kind needs many strokes a day to keep it full, but the family prefer this exercise to carrying water in and out in pails. A windmill or a steam pump is the next advance in way of improvement, and electricity is best of all. Perhaps, some day, we all can have it.

*Year Book of Department of Agriculture, 1914.*

FIG. 89. — A water system with a windmill furnishes running water to the house and barns.

**Some other ways of saving strength.** Machines in the kitchen save just as much as machines for farm work. We have seen pictures of the bread machine, and of the Dover egg beater. A meat chopper, screwed to the table, is quick to use and easy to wash. There are some things for sale that are foolish to buy, — like an egg opener that an agent carried about Pleasant Valley one day. But there are many useful devices that you want to plan to buy, when you know that they

are good. You can have some problems in arithmetic and physics that will help you to understand why a machine is a saving.

### EXERCISES AND PROBLEMS

1. Examine a Dover egg beater. Count the cogs on the large wheel and the small. How many times will one turn of the large wheel turn the small wheel? The handle turns the large wheel, and the small wheel the blades. How many "beats" will the white of egg have in the bowl for one turn of the handle?

Beat the white of a fresh egg in a bowl with a fork, until the white is so dry that you can turn the bowl upside down, and count the number of beats as you work.

Now, here is your problem. How many beats do you save if you use the Dover?

2. The Pleasant Valley home-making class studied the working of a pump and a "windlass" for a well, in their Physics, to find out how they worked. Suppose you do.

3. Mr. Stark put in a windmill to pump water into a tank for the house and barn and garden. How does the wind pump water?

4. Draw a plan of your own kitchen at home, like the one in Fig. 85. Can steps be saved?

### REVIEW

1. Do you like the same breakfast in summer as in winter? Why not?

2. Can you tell why a farmer takes a more hearty breakfast than a man who works in an office all day?

3. Give three different ways of making coffee. Which way would you prefer to use for breakfast?

4. What are some meat dishes that are not expensive and are easily prepared for breakfast?

5. Is there any reason for cooking cereals?

6. How do you want your oatmeal cooked for breakfast?

7. What is polished rice?

8. In what ways have you seen rice boiled?

9. Do you know any way to use rye and corn products as food?

10. When eggs are plentiful, how can you preserve them for use in the winter?

11. Tell how you will have eggs cooked differently every morning for a week.

12. If you want to raise eggs to sell, what things about eggs will you remember?

13. Do you know how to make popovers?

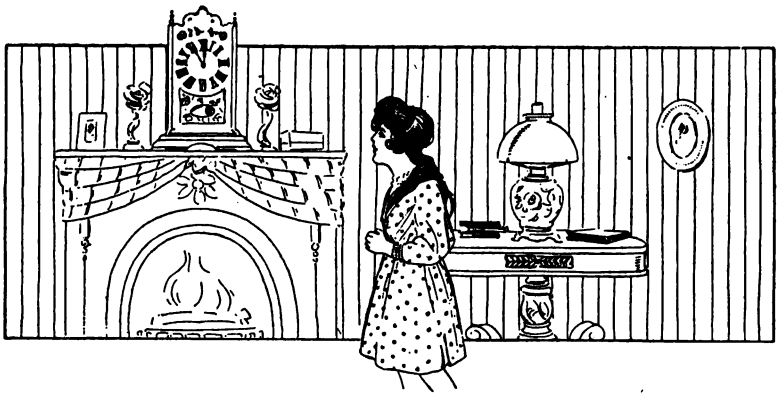
14. What makes quick breads light?

15. Can you make any suggestions for saving steps in the kitchen?

16. Plan a kitchen that can easily be kept clean.

17. How may one have running water in a kitchen?

18. What machine for saving strength would you like to have in a kitchen?



# CHAPTER V

## THE HOME DINNER

### Lesson 22

#### MENUS FOR DINNER

How does dinner differ from the other meals?

"Everybody eats more at dinner," was the answer to this question given by one member of the household arts class in the Pleasant Valley School. This may not be true always, but it is true that we usually make dinner a meal where we have soup, perhaps a meat dish like a roast, or a piece of boiled meat, more vegetables than at breakfast and supper, and some sweet dish that we call "dessert"; and even if we do not eat more, the food itself is "heartier."

Here are three plans for dinners.

DINNER PLANS

| I | II | III |
|---|---|---|
| 2 hot dishes (as meat and vegetable) | Soup | Soup |
| Bread and butter | 2 or 3 other hot dishes (as meat and 1 or 2 vegetables) | 2 or 3 hot dishes |
| Dessert | | A relish (as jelly or pickle) |
| Relish | Bread and butter | Bread and butter |
| | Dessert | Salad |
| | Beverage | Dessert |
| | Relish | Beverage |

One of the hot dishes can be fish or shellfish, or baked beans; and when there are two vegetables we usually like to have potato, although rice, samp, or hominy can take the place of the potato.

It is really an art to put together dishes that belong together; so let us study this for a little time.

Why do certain dishes fit each other at one meal? Suppose we take Dinner II, and arrange it this way: potato soup, baked beans, boiled potato, boiled rice, bread and butter, rice pudding. Here is another menu: tomato soup, baked potatoes, stewed tomato, boiled greens, bread and butter, baked apples. Here is a third one: meat soup, meat, warmed-over fish, custard pudding made of eggs and milk.

Do these menus seem just right to you? Mollie Stark was sure that her father and brothers would not like any of them; and, although they might prefer the third one to the others if they were very hungry, there

seemed something wrong even with that. Miss James asked her to change them and make something better. Here is the first menu that Mollie planned: tomato soup, meat, boiled potatoes, string beans, apple tapioca pudding.

Here is another of Mollie's menus: potato soup, fish, stewed tomato, samp (in place of potato), and baked custard. Can you explain the difference between these and the first three? You may be sure that there are too many dishes of the same nature in each of those three. The first has too much starchy food; the second too much green vegetable and fruit food; the third too much meat food. We seem to crave a mixture. This is where our natural habit and desire are good. In the two menus that Mollie planned, you can see that the balance is better among the meat, the starchy, and the "green" foods. You notice that the dessert in the second menu balances better with the first than it would with a hearty dish of meat, for fish does not seem to "stay by" as meat does. Our appetite and nature agree about some things in our meals. Other things that we like, we seem to like because of some custom that has come to us from the past. When the Puritans of New England cooked their wild turkey at the first Thanksgiving, they probably made cranberry sauce from the wild berries gathered in the bog; the combination was pleasing, and we like it to this day. Some of our food habits are not so good; as, for instance, a breakfast of sausage, griddlecakes, and sirup.

Here is one simple rule that is a good one in making menus: where there is a good supply of the meat dish, then a light dessert, principally fruit, is best; but when the meat is a little short, have a dessert made with milk or with eggs and milk, or have suet pudding.

The plans given are suggestions only. Of course we do not want soup at every dinner, and if the soup has meat in it, we do not need any other meat. We should all learn moderation in eating our dinner, especially if we are very hungry at the beginning of the meal; and remember that, if there is a dessert, it is a part of the dinner. When we have eaten quite enough of everything else, and then take pudding or pie, no wonder that we find the latter giving trouble.

**How much shall we have for our family?** One rainy Saturday, when Mollie Stark was spending the day with Marjorie Allen, Marjorie said to her mother, "Please leave us all alone in the kitchen and dining room, and let us get dinner all by ourselves." Mrs. Allen took up a piece of sewing, glad to enjoy a quiet morning in the cheerful living room, with Grandmother. In about five minutes, open came the door from the kitchen, and Marjorie was saying, "Mother, how much tomato soup do you think we need?" Her mother laughed. Then they all had a little talk about the quantities necessary to serve of each dish. Mrs. Allen explained that in a family as large as hers it is not needful to plan so carefully for the exact amount, for left-overs can always be used; and that it saves labor and fuel to have

portions of certain dishes remaining, especially those that keep well. Marjorie remembered that, when she had visited her aunt, who lives in a small apartment in the city, it was a part of the planning of a meal to have very little left over, because the storage space was so small; whereas, in the Allens' home, and the Starks', there is the cool pantry and the large ice box.

This is the way Mrs. Allen helped the two girls to plan the quantities. There were nine people to serve: Grandmother, Mr. and Mrs. Allen, Mollie Stark, Barbara, her little sister and two younger brothers, and one man who was helping Mr. Allen. Mrs. Allen said that one learned by experience how much certain members of the family would eat of certain things, and that there was no fixed rule.

| MENU | QUANTITY |
|---|---|
| Tomato soup | About ½ pint each, 2 qts. |
| *Remarks.* 2 quarts enough. Grandmother does not take it. | |
| Pot roast | 6 lb. |
| *Remarks.* What remained, to be used second time. | |
| Mashed potato | 15 large potatoes |
| *Remarks.* If smaller potatoes, take two apiece. | |
| Sweet corn | 2 doz. large ears of corn |
| *Remarks.* This might not be enough the first time that corn is served in summer. | |
| Bread and butter | 12 or 15 slices bread. A large square of butter on each butter plate. |
| *Remarks.* More bread can be cut if wanted. The potato does | |

not need more butter; if butter is eaten on the corn, everybody calls for more.

| | |
|---|---|
| Apple pudding with baking powder crust.<br>Foamy sauce. | 2-quart baking dish large enough to hold eight or ten apples when sliced.<br>Crust from a pint of flour.<br>Double recipe for foamy sauce. |
| Coffee | 1 pint. |

*Remarks.* Mrs. Allen said that Mr. Allen and his helper could have a cup apiece, but it wasn't served for any one else; and Grandmother remarked that her digestion was good because she didn't take tea or coffee for dinner.

| | |
|---|---|
| Pickles | None |

*Remarks.* Mrs. Allen said that the tomato was acid, and the apples slightly so; so no more acid should be taken.

**Plan for cooking dinner.** Then Mollie and Marjorie went back to the kitchen, and planned for cooking the dinner.

When it is time for dinner, everything needs to be ready at about the same time, so that everything can be served and everybody helped quickly. Do you think that this is an easy matter? One very wise man, who was getting his own breakfasts, said that he knew how to cook cereal, boil eggs, and make coffee, but that he never yet had been able to have them all ready at the same time! Mollie and Marjorie thought this dinner all out before they began. This is the way they planned it:

(1) See what things are already cooked, and what needs to be done to make them ready for the table.

(2) Notice what dishes take longest to cook, and start those first.

(3) Notice what food is best eaten just as soon as it is done, and what can stand awhile on the back of the stove.

(4) Notice what things you want to have cold, and see if you can put those on last.

A cook who can do all this, have everything on the table that needs to be there, all the hot dishes hot, and all the cold dishes cold, is really a very "smart" person. Here is an exercise for you: Write out the way that you think Mollie and Marjorie planned this dinner.

### EXERCISES AND PROBLEMS

1. Consider the dinner that Mollie and Marjorie planned. Which food needs the longest cooking? Which the shortest? Which can be kept hot the most easily? Study the recipes. Each pupil should make a plan, and then compare notes in class.
2. Make several simple menus for dinner, and plan the cooking.
3. What are some of the most important things to remember in planning a dinner?

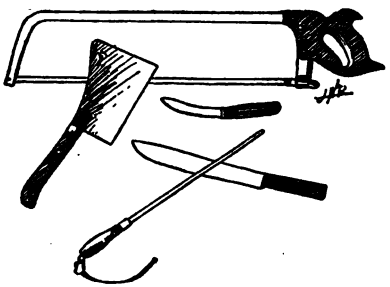
## LESSON 23

### MEAT AS FOOD

WHAT shall we do about meat?

The price of meat has risen so much in the last few years that this is an important question for everybody, both in the city and country.

Mr. Allen decided to study very carefully the raising of meat. He sent to the Bureau of Animal Industry, U. S. Department of Agriculture, for Bulletin No. 183, which gives very careful directions about butchering the different animals, curing and storing meat for winter, and making products like sausages and headcheese. When the other Pleasant Valley farmers talked about the matter at the Grange, they decided to follow Mr. Allen's example, and sent for this very valuable pamphlet.

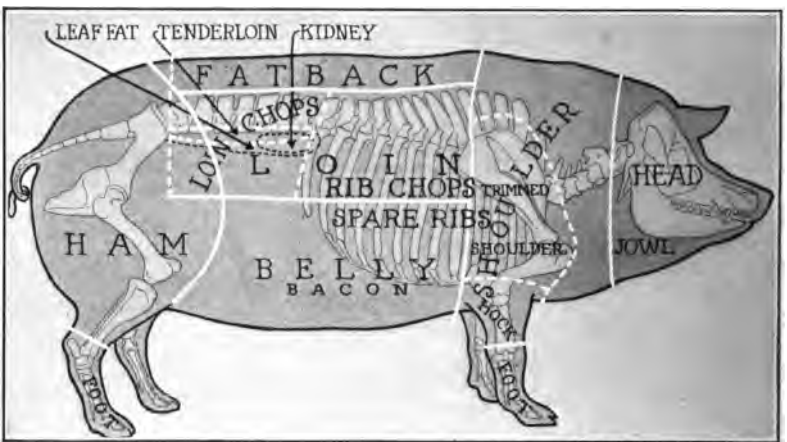


*U. S. Department of Agriculture, Farmers' Bulletin, No. 183.*

FIG. 90. — Mr. Allen bought these tools for cutting meat.

**Do we need meat as a food?** When we can use milk, cheese, eggs, vegetables, fruit, and bread plentifully, there is much less need of meat than many people think. If it is our habit to eat it freely, we should not make a sudden change and leave it off immediately; but most people are much better in health when they eat meat but once a day. Meat gives us protein, fat, and mineral matter. Gelatin, which comes from the bones and tissue, is a protein, which is of use in the body. The juices of the meat which give it flavor have no food value. Some people seem to be able to digest meat more easily than the other protein foods, — fish, eggs, milk, and so on, — but this is not always the case.

When a great deal of meat is eaten, say three times a day, intestinal trouble may result, and too much acid is formed in the body. People who think that they




Courtesy of E. C. Bridgman, New York.

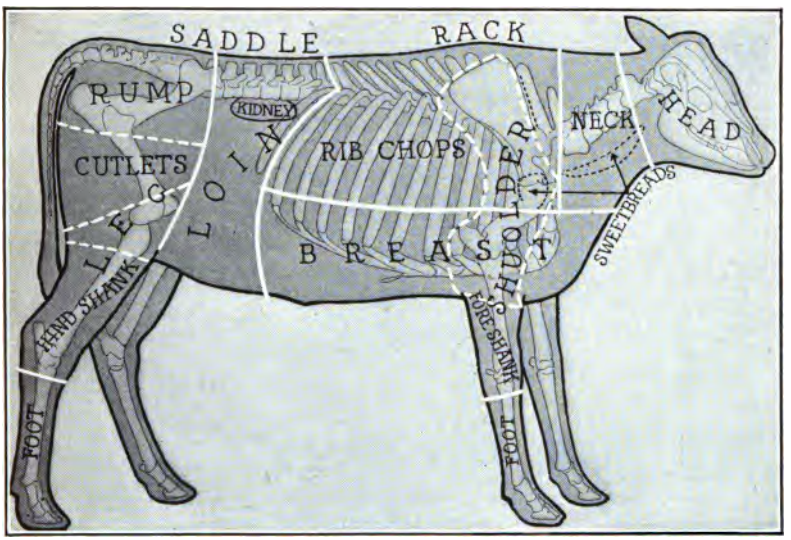
FIG. 91. — Cuts of pork.

must eat meat should drink water in large quantities and eat fruit and green vegetables.

Little children should not be given meat; for milk, eggs, and grain foods are better for growth, and the meat may take away their liking for these foods. Most people do enjoy the taste of meat, but we can learn to be moderate in its use. There are many human beings who never touch it, and who are well nourished, with bodies strong for work.

**The cost of meat.** Only when our meat comes from wild animals, who find their own food, is meat an in-

expensive food. Even when we kill and use our own animals, we pay for the meat in the food we give to them. The interest on the pasture land which cannot be used for other purposes, and our own labor in caring for animals,

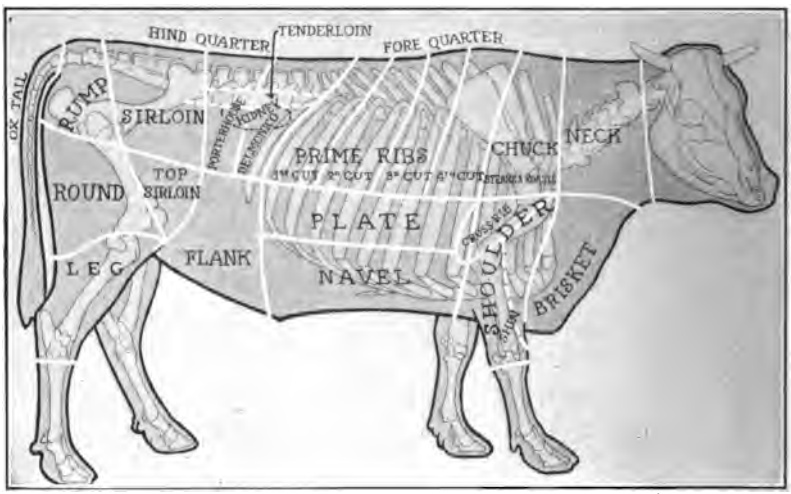



*Courtesy of E. C. Bridgman, New York.*

FIG. 92. — Cuts of veal.

housing them, and raising food for them, taken all together make it expensive to eat them. On the other hand, the milk, cream, butter, and cheese that they give us is a less costly food than their own flesh. This is true of beef at least. You can see that it is different with the hog, whose flesh is the only product. From the sheep we have wool as well as meat, but no other product that we can use as food. All these animals

make a return to the land, which is valuable. Taken as food to be raised, do you not see that the beef is the most costly to the farmer? Veal, the flesh of the calf, is less costly to the farmer than beef. Can you explain why? The calf should not be eaten when less



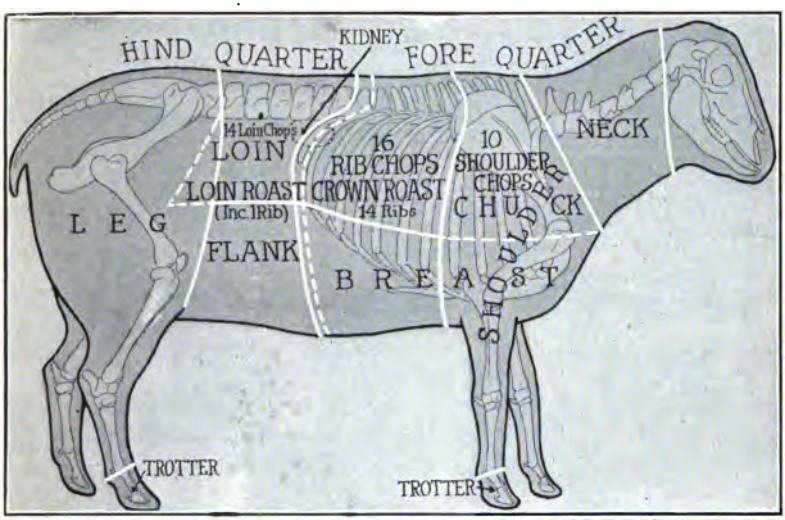

*Courtesy of E. C. Bridgman, New York.*

FIG. 93. — Cuts of beef.

than six weeks old. All this does not mean that we should not eat meat; but we should understand that it is not a cheap food simply because we raise it ourselves, for we pay for it in food and labor, and often can get better food value for ourselves from other things for less labor.

Look on page 170 again to see the values of eggs, milk, and beef; and you can see a little more clearly still why milk and eggs are on the whole cheaper than any meat.

**What to be careful about in buying meat.** Mrs. Allen was careful in explaining to Mollie and Marjorie that she bought from one butcher's cart rather than another, because this butcher was careful to buy good

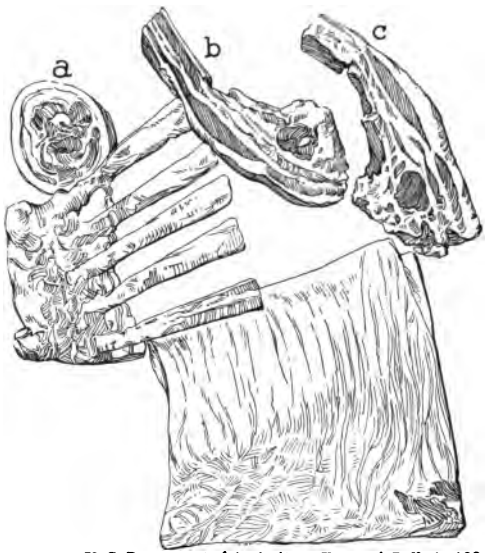



*Courtesy of E. C. Bridgman, New York.*

FIG. 94. — Cuts of lamb and mutton.

beef, in the first place. Then, too, he had a clean place for hanging his beef, chilled by ice. His shop was very clean, scrubbed out often, and he fought flies all the time. His cart, too, was cleaned daily, screened from flies, and the meat covered from the dust of the road. The other butcher allowed flies to crawl over the meat, and his cart and shop had an unclean appearance and smell.

Miss James had talked about certain dangers from meat. If the animals themselves are unhealthy, there may be tiny living creatures in their flesh, known as parasites. The terrible disease trichina sometimes found in pork is one of these. Tapeworms come from beef. We can protect ourselves from these parasites by thorough cooking of the meat. The cooked meat should be pink rather than red and raw looking.




*U. S. Department of Agriculture, Farmers' Bulletin 183.*

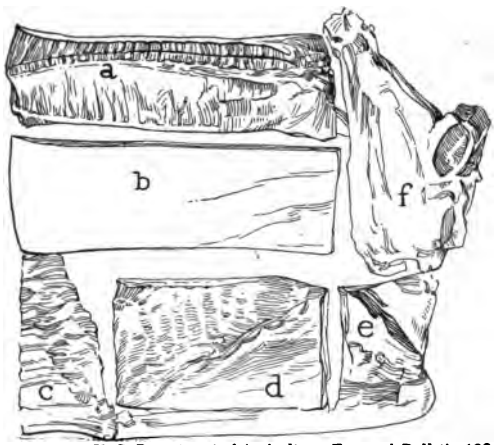
FIG. 95. — Prime ribs of beef. a. Rolled roast. b. Folded roast. c. Standing roast.

Another trouble, known as ptomaine poisoning, may occur when meat has been kept too long and has not been kept cold enough. The ptomaine is a poison formed by the bacteria that have developed in the meat. Then, again, the bacteria themselves injure us, and are now thought to be the cause of most of the sickness which has been called ptomaine poisoning.

There are laws that require inspection of all meat. The Woman's Club in Pleasant Valley made a very

thorough study of this subject and worked with the local butchers until matters were very much improved.

**Selecting meat for cooking.** The cuts of meat vary somewhat in different parts of the country. We know that meat is either tough or tender, and that the difference is caused by the amount of exercise given to the different muscles of the animal's body. The flesh of the meat is muscle. You easily see that the muscles lying along the animal's spine and underneath the body are used much less than the muscles of the neck and the legs. The tough cuts, therefore, come from the neck and legs, the tender cuts from the middle of the back, and the toughness increases toward the neck and the hind legs. The muscles of the abdomen give a tender and coarse-grained meat.




*U. S. Department of Agriculture, Farmers' Bulletin 185.*

FIG. 96. — Side cuts of pork. a. Loin. b. Fat back. c. Spare ribs. d. Bacon strip. e. Trimmings. f. Leaf.

The tender meat is no more nourishing than the tough, but is easier and pleasanter to chew; and, as there is less tender meat than tough, the tender meat costs more

than the tough. It is not good sense to buy porterhouse steak at 30 or 32 cents a pound, or to take it in exchange for eggs at that price. It is better to buy the round or rump steak and cook it in such a way that it loses its toughness. Can you explain why the meat of young animals is more tender than that of the full-grown creature?

**How shall we cook our meat?** Sometimes we wish to keep the juices in the meat, and sometimes we wish to draw out the juices for beef tea or soup, or for making gravy. If we buy a tender meat, we do not wish to make it hard by poor cooking. If the meat is tough, we should select some cooking process that will make the meat as tender as possible.

Let us try two simple experiments that will show us what to do when we wish to draw the juices out, or to keep the juices in.

### TWO EXPERIMENTS WITH MEAT

**Experiment A.**

Chop finely a small piece of meat, squeeze out the juice with a lemon squeezer, and heat this juice in a saucepan. Notice a whitish substance that results. This is meat albumin that is affected by heat in about the same way that the white of egg is affected. We say that the albumin has coagulated.

**Experiment B.**

*Apparatus.* If possible, 2 glass beakers, 1 square wire net. If these are not available, use an ordinary tumbler and a small saucepan.

*Method.* *a.* Put a small piece of meat in a beaker with cold water, and allow it to stand.

*b.* Bring water to the boiling point in the beaker. Throw in a small piece of meat.

Compare the appearance of the two pieces of meat and the water in the two beakers. What has happened? You see that the juices of the meat have come out in the cold water. In the other piece you can see that the surface of the piece is cooked and that little of the juice is in the water. The heat of the water has coagulated the meat albumin just as it did in Experiment A. This has made a little crust over the meat and the juices cannot escape. A hot pan has just the same effect.

In order to understand what cooking does to meat we must know something more of the structure of the muscle. Each muscle is made up of bundles of tiny tubes held together by a strong substance that we call connective tissue. In tough meat the muscle tubes are thicker and there is more of the connective tissue. If you examine a piece of meat, you can easily find this tissue. The structure of the muscle is a little like that of an orange. Take a section from an orange, open it, and take out some of the single cells. These cells may stand for the muscle cells of meat that you can see only through a microscope. If you cut one of the tiny orange cells, the juice escapes, and this is what happens when the muscle cells are cut across. The juices will also pass through the wall of the cell when the muscle is heated and when the meat is put into cold water. When, however, we sear the outside of the meat, a crust is formed which keeps the other juices in.

Whether the meat is tough or tender, the most valuable protein stays behind in the muscle cell. The substances that we can draw out from the cells are called the extractives, because they *can* be extracted. The tough meat has as much nutritive value as, if not more than, the tender; and our problem is to soften the strong connective tissue. This can be done by long, slow cooking with plenty of moisture, which dissolves out the gelatin and softens the whole mass. A high temperature shrinks and hardens fiber, and the tenderest meat will become like sole leather, if cooked too hard and too long. This is true with tough or tender fowl.

**Something more about cooking meat.** In cooking pieces of tender meat, therefore, we sear the outside by using a high temperature at first, and then all that is necessary is to cook the meat at a lower temperature until it is done through. Thin pieces, like steak and chops, cook only a short time, while roasts and boiling pieces cook much longer.

**Salted, corned, and smoked meats.** Mrs. Allen always corns the beef for her family. She always selects solid pieces of beef, but some people like the plate beef with layers of fat in it.

**Corning beef.**[1]

*What.* 100 lb. of solid meat with the bone out
$1\frac{1}{4}$ lb. saltpeter
25 lb. of salt
6–8 oz. of onion, chopped fine

[1] This recipe is due to the courtesy of a southern butcher. In the original rule garlic was used instead of onion.

*How to make.* Rub each piece well with saltpeter, salt, and onion. Put the meat in layers in the barrel, and cover the top with salt. When this has stood 3 or 4 days, put a board on the top and put heavy weights on the board. This will be ready for use in 8 days. Mrs. Allen always takes it from the bottom first.

**How to cook the corned beef.**

Soak a piece of the right size in cold water overnight. In the morning wipe it off and put it in a kettle of cold water. Heat the water slowly and take off the scum. Let the water boil very gently for 4 or 5 hours, depending on the size. When served hot, let it stand a few minutes where it will not boil, before draining off the water.

*To serve cold.* Pull the meat apart with two forks, taking out poor pieces, and mixing up the lean and fat. Put it into a pan. A bread pan makes a good shape. Put another pan on top, and set flatirons on the pan. This presses the meat down, if you let it stand for several hours. When cold, it can be nicely sliced and is good for sandwiches or for a supper dish.

**Boiled ham.**

Ham is one of the smoked meats. A leg of ham makes an excellent dinner, and the left-over pieces can be used to the very last scrap.

Soak the ham overnight, trim, wash off, and put to soak again. Mrs. Allen always soaks hers two nights and a day. In the morning put it in a kettle of cold water, heat it slowly, and let it boil about 5 hours. A knitting needle is a good thing to test it with. When it is done, skim it, put it back in the kettle, and let it stand until cold. If you want to serve it hot, take it from the kettle, put it in a roasting pan, and let it bake until the fat begins to cook. Sprinkle it all over with fine cracker crumbs or flour, and bake it until the crust is brown.

**Cooking fresh meat.** The flavors to be used with meat are a very important part of meat cookery, especially with tough meats. Dried herbs help to make meat dishes savory. Onions, carrots, turnips, celery, cabbage, in small portions, give a fine flavor. Spices, such as cloves, mustard, or even nutmeg, used in small quantities, also add to the savoriness of cooked meat; a little acid like lemon juice, or currant jelly, put into a soup, or stirred into a gravy, helps very much.

**Broiling tender chops and steak.**

Never spoil your tender meat by frying it hard with a large amount of fat.

*Broiling over coals.* Wipe meat with a damp cloth. If a wood or coal stove is used, have a bed of glowing coals ready. If gas is used, have the gas broiler thoroughly heated. Grease the bars of the broiler. Place meat in the broiler and sear meat first on one side, then on the other. Continue to turn the broiler, and cook the meat until it is brown and done according to taste. Steak an inch thick will take about ten minutes to be cooked to a medium degree. Chops are broiled in the same way.

*Pan broiled.* Here we use just enough fat to keep the meat from sticking. An iron frying pan is the best utensil. Heat the pan and brush it over with a small piece of fat cut from the steak or the chops. The purpose of this is merely to keep the meat from sticking to the pan. The principle of cooking is the same as with broiling over coals. Turn the steak or chops frequently, using a knife and a fork, but being careful not to prick the meat with the fork. The length of time is slightly longer than for broiling. This method must not be confused with the frying of steak in a pan with a large

amount of fat. This does not fry the steak, and is often a convenient method.

*Roasted meat.* This is a rule for tender meats. Wipe roast with a damp cloth. Sprinkle with salt and dredge with flour. Place in a roasting pan, fat side up if it is a standing roast. Put the roast in a very hot oven, and after fifteen minutes reduce the heat. Baste roast two or three times with the fat that tries out during cooking. The usual allowance of time for a medium rare roast is fifteen minutes for every pound of meat.

*Roast beef gravy.* After the roast has been taken from the pan, pour out all but 1½ tablespoonfuls of the melted fat. Stir in 1 heaping tablespoonful of flour and brown very slightly. Add one cup of cold water and stir constantly until thickened. Add ½ teaspoonful salt. Strain.

*Round steak.* Ask the butcher to cut it an inch or an inch and a half thick. A pound of round steak cooked in this way will give good-sized portions to three people. Wash the steak off with salt and water. Heat a deep frying pan, and melt enough beef suet to just cover the bottom. Make the pan very hot and brown the steak first on one side, then on the other. Remove to a cooler part of the stove, or turn down the flame, if it is a blue-flame oil stove. To a pound of steak allow 1 teaspoonful of salt, ½ an onion chopped. Cover the meat with water, put a cover on the pan, and let the steak simmer for two hours. This is perfect when cooked in the Atkinson cooker all the morning. You may make this more savory by adding a little of several kinds of vegetables.

*A pot roast or stew.* For this select a large, solid piece of meat from rump or round. The method of cooking is in principle just like the cooking of the round steak, only the piece of meat is larger. The meat is browned all over in fat and put in the kettle. Suppose you have a 5-lb. piece of meat. Put in the kettle with it two or three carrots, a small turnip

or two, two or three onions, and a few stalks of celery or celery leaves or celery salt. The flavor is improved by a few cloves, say ½ dozen. Add water and cook very gently for from 4 to 6 hours. This is another kind of dish that cooks well in the Atkinson cooker. When you are ready to serve the beef, take it out and put it on a platter and keep hot. If the water has not boiled away enough, let it cook a little longer, and thicken with a little flour. If you have a pint of gravy, you will need a tablespoonful of flour. Stir a little cold water into the flour, and stir this paste gradually into the hot liquid. Let it boil up and serve it with the meat.

**Old-fashioned meat soup.** Everybody says that Grandmother Stark can make the best soup in Pleasant Valley: and she has not any rule! You will find recipes for making soup in all the cook books, but this is Grandmother Stark's method. She uses meat bones or chicken bones and any pieces of cold meat that are left. She cuts up the larger pieces of meat and puts them to one side. She breaks up the bones, puts them in a kettle, and covers them with cold water. The kettle stands on the stove all day long, simmering gently, and from time to time Mrs. Stark adds a little more hot water. When the soup has simmered until the bones are bare, they are removed. Then Mrs. Stark looks in the pantry and refrigerator, and adds any cooked vegetable that is left, and a little stewed fruit, if it is not too sweet. When she is asked what she uses, she says, " Just whatever I find." Sometimes she adds a teaspoonful or so of dried herbs or a few cloves. If the soup is a little thin, it is thickened with flour, but

when cold mashed potato or beans are added, no other thickening is needed. Just before serving, the larger pieces of meat are added and, if there are not enough of these, cooked vegetables like carrots, turnips, beets, or whole peas and beans. Served with bread this makes a good dinner or supper for any cold day in winter. It is not a summer dish because it needs a long, slow cooking. It can be made in an Atkinson cooker, but not so well in a fireless cooker. You may think that you would not like it; but try it some time and see.

EXERCISES AND PROBLEMS

1. Why is meat a more expensive food than beans?
2. Why is it better to eat meat only once or twice a day?
3. Make a list of the cost of different cuts of meat in your own home place. Study cost of canned meats (page 298).
4. What is a meat substitute? Make a list of those that you can use at home. Write recipes for tough and tender fowl.

## LESSON 24

### FRESH VEGETABLES

How may we have fresh vegetables and use them to best advantage?

It is always a happy moment with Marjorie Allen and her brothers and sisters when the first crisp heads of lettuce, tender green peas, and succulent sweet corn are ready for the table.

**The home garden.** Mrs. Allen, Marjorie, and the children plant their own garden, and with a hand

machine keep it well cultivated. It is fenced in by wire netting and laid out in convenient beds with narrow paths between, and with bright annual flowers making a gay border. Mr. Allen has the garden plot plowed and harrowed in the spring, and runs the cultivator through a few times in the course of the season. For fertilizer they use sweepings from the henhouse and wood ashes, except with the potatoes. Besides, Mr. Allen gives them a share of his acid phosphate. They also work into the soil decayed leaves and vegetables, which give the material that most soil needs so much.

*Courtesy of New York State College of Agriculture at Cornell University.*

FIG. 97. — Mrs. Allen's garden has a border of rudbeckia.

**Watering the garden.** This is the problem in dry seasons and soils. Remember to keep a blanket of dry earth around the plants by cultivation. If you have running water and a hose, you are indeed fortunate. But sometimes it pays to carry water. Use a pail on a wheelbarrow, and, if the water supply is low, take slops from the house, diluted

with clean water if the slops are strong with soap and washing powder. One bright girl, a member of a canning club, put an empty tin can with holes in the lower part in the ground near the roots of each tomato plant, and kept each can full of water. She was amply paid for her trouble by the large crop of the fruit in a dry season.

*Courtesy of New York State College of Agriculture at Cornell University.*

FIG. 98. — The tools Mrs. Allen and Marjorie found necessary for making and cultivating their home garden.

**Planting in succession.** One can have each kind of vegetable lasting over a period of several weeks, by planting early and late varieties of the kind, and by planting several times. This more than pays for all the trouble.

*Courtesy of New York State College of Agriculture at Cornell University.*

FIG. 99. — Marjorie Allen learned to wrap paper around a seedling to keep off cutworms.

**Plant insects and diseases.** Watch for them above ground and below. Send for advice to your State College. Letting things go is ruinous in the end. Somebody has suggested farming as a moral substitute for

war. Do you understand what this means? Ask your father's opinion of this.

**What shall we have?** Study your seed catalogue and try new kinds. Lettuce, spinach, radishes, asparagus,

*Courtesy of Mrs. Hetty Browne, Winthrop Normal and Industrial College.*

FIG. 100. — The boys and girls with the teacher are making a school garden at the Oak Ridge School in another wide-awake town.

peas, beans (string and shell), summer squash, summer turnips, early beets, early carrots, tomatoes, cucumbers, sweet corn, lima beans, cauliflower, cabbage, — these are the staples, but there are still others. The winter vegetables need to be grown in larger quantity than you can manage alone.

**Picking vegetables.** Gather green vegetables as near the time of cooking as possible. In hot weather

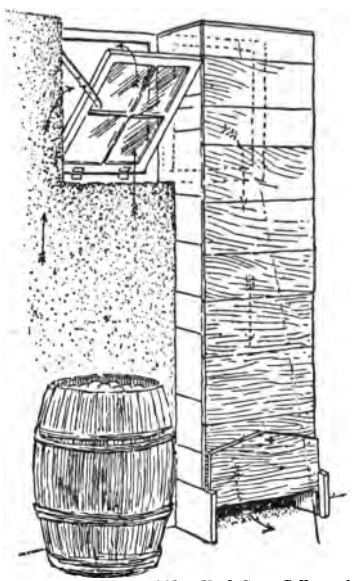
*A. Fowler, Photographer.*

FIG. 101. — 100-Calorie portions of vegetables.[1]

| KIND | WEIGHT OF PORTION, OUNCES |
|---|---|
| Asparagus | 16 |
| Beets | 10 |
| Cabbage | 13 |
| Carrots | 10 |
| Corn | 9 |
| Cucumbers | 20 |
| Lettuce | 22 |
| Onions | 8 |
| Potatoes | 5 |
| Spinach | 15 |
| Tomatoes | 15 |

[1] See Lesson 28.

it is pleasant in the cool of the day after supper to gather them for use next day, however. Peas and beans can be picked in the evening, shelled and prepared. Potatoes and root vegetables do not lose freshness at once. Lettuce, spinach, and cucumbers should be put in cold water immediately. If cucumbers are pared and sliced, or cut lengthwise and put in salted water, they seem to become more digestible for some people.



*Courtesy of New York State College of Agriculture at Cornell University.*

FIG. 102. — Fruit and vegetables keep firm and fresh for a longer time if stored in a cellar ventilated in some simple way like this.

**Storing winter vegetables.** Hard squash, pumpkins, potatoes, carrots, beets, turnips, cabbages (also apples) — what shall we do with these? You see, storing is a way of preserving for a time the vegetables that do not easily spoil. You need a dry storage place, above the freezing point, yet not too warm. It is much better to have a storehouse dug into the ground for this purpose than to keep many vegetables under the house. If this cannot be, partition off a part of the cellar for vegetables. In some way arrange to have air enter it when the weather is not too cold; and in

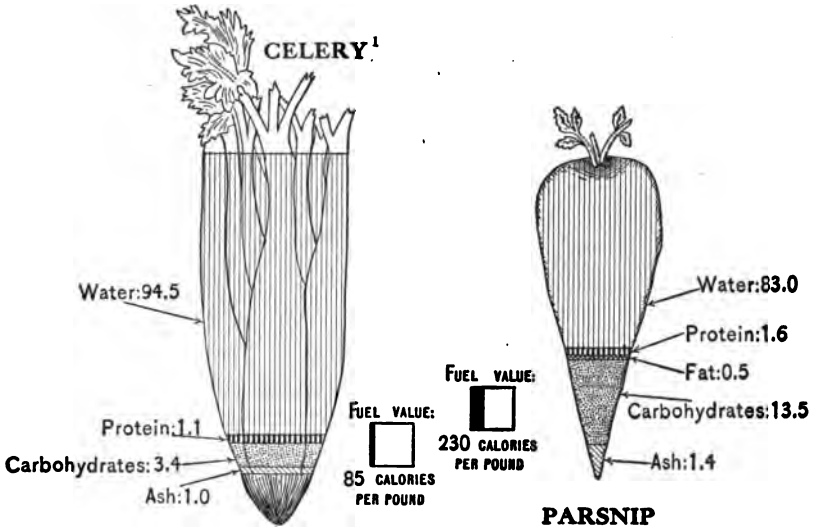
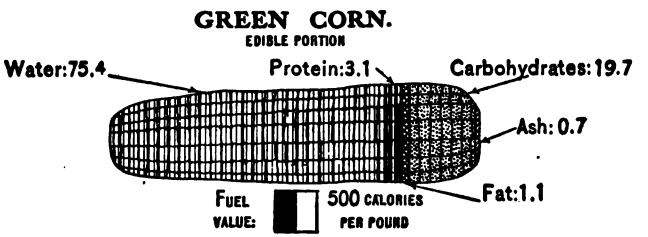



FIG. 103. — (*a*) Composition of celery. (*b*) Composition of a parsnip.




(*c*) Composition of green corn.
Edible portion.

[1] United States Department of Agriculture. Office of Experiment Station, A. C. True, Director. Prepared by C. F. Langworthy, Expert in charge of Nutrition Investigations.

early spring give it a "*big*" cleaning out, finishing off with whitewash.

**What foodstuffs do vegetables give us?** We may, indeed, look with pride upon the results of our working with nature, for each vegetable is a little storehouse of materials, taken from the earth, air, and water, that are sources of health and strength for us. Remember in particular the iron, the lime, the sulphur, and all the other minerals that Mother Nature has laid away so cunningly and that we so greatly need. Taking into account all the varieties, we eat every part of a plant, if not always the whole of any one—cauliflower is a deformed flower, you know.

| | |
|---|---|
| The seeds | Contain all the foodstuffs.<br>Well-developed peas and beans are rich in protein. |
| Roots and tubers (the potato) and the bulb (onion) | Contain all the foodstuffs.<br>Small amount of protein and fat.<br>Much starch or some form of sugar. |
| Rinds (squash and pumpkin) | Contain all the foodstuffs in small amounts.<br>Mineral substances the chief value. |
| Leaves and stems | Very valuable on account of the mineral matter. Other substances in such small quantities that they are not important. |

Make your own list in your notebook, putting against seeds all the seed vegetables that you know, and so on. Where will you put string beans? This list is useful in connection with that just given, because it will show you the chief food value of each kind.

If you have a good supply of many varieties, you will use less meat in summer. Eating vegetables is much better for you, and for your purse.

**Eating vegetables raw.** We can eat lettuce and some other green leaves raw. We enjoy crisp radishes, cucumber, and celery, and tomatoes and melons, which are "fruit" rather than "vegetables." Our work with these is to serve them clean and cool and to remove only the tougher outside skin.

**How shall we best cook our vegetables?** This story will amuse you. One day a mistress asked her cook to bring the meat soup from the refrigerator that she herself might prepare it for the dinner. The cook brought a bowl with a bone, bare except for gristle and a few dry strings of meat. "But where is the soup?" "Oh, ma'am, this is all the soup there was when I threw away the water!" But what has happened if you cook spinach in a kettle of boiling salted water and strain off all the water? You have left behind little more than the bones of the spinach, for in that water was lost the precious iron that you so much need. After such struggles to store up food material it seems a bit foolish to throw it away, does it not? "Shall we never boil vegetables, then?" Yes, sometimes, but not often. We will look into this a little further.

**What does cooking do to vegetables?** You know already what happens to the vegetable fiber and starch. Where there is protein the change in cooking is not very important. The heat does not change the

mineral matter, *but the water dissolves out the mineral substances to a large extent.*

What can you do then to save the mineral matter? One way is to use as little water as possible, and then use the water; that is, have only so much water that by the time the vegetables are tender there is so little liquid left in the bottom of the pot that it can be served with the vegetables. Perhaps this table will help you:

| | |
|---|---|
| Bake when you can | Potatoes, squash, corn, even young beets, old beans, and peas. |
| Steam when you can | Any vegetable. In a steamer the cooking takes more time. |
| Stew when you can (This means so little water that none is thrown away.) | Spinach, celery, string beans, tender peas, and so on. |
| Boil in large quantity of water and throw away the water | Old, strong-flavored vegetables, because you want to be rid of the flavor—strong onions and cabbage. |

**Time-table for stewing, boiling, and baking.**

*Fifteen minutes.* Tender cabbage and sweet corn. These are usually cooked too long.

*Thirty minutes.* Asparagus, peas, potatoes of medium size, summer squash, tomatoes.

*Forty-five minutes.* Young beets and carrots, onions, young parsnips, medium potatoes baked, sweet potatoes boiled.

*One hour.* String and shelled beans, cauliflower, oyster plant; winter squash, steamed or baked; young turnips.

*Two hours.* Old carrots, beets, and turnips.

*Six to eight hours (or more).* Dried beans, lentils, and peas, baked in the oven, with water added.

**Stewed celery.**

(A green vegetable.) Stalks of celery, too tough or coarse for serving uncooked, are delicious when stewed. The process is simple. Wash, scrape, and cut the stalks crosswise. Place them in a stewpan, barely cover with hot water, adding a teaspoonful of salt to a pint of celery. Cook gently for half an hour or until the celery is tender. Use the liquid remaining in making a sauce, adding some milk to make the necessary amount of liquid. Three fourths of a cup of sauce is enough for a pint of celery. (See page 64.)

**Cabbage.**

The method given makes cabbage a delicious and attractive vegetable, as delicate as cauliflower; and the odor in the kitchen is not noticeable.

Select a small cabbage, with the ribs in the leaves not too thick. Prepare the cabbage before washing it by cutting out the stalks from below with a sharp knife. Separate the leaves. Have ready the largest kettle available, nearly full of rapidly boiling water. Drop in one cabbage leaf at a time, pressing each one down with a long-handled spoon or skimmer. Do this so slowly that the water does not stop boiling. Leave the kettle uncovered, and allow the cabbage to cook from 12 to 15 minutes, depending on the thickness of the leaf stalks. Remove the leaves with a long-handled skimmer, putting them into a colander standing on a plate. *Immediately* pour the hot water down the sink drain, turn on the cold water to flush away the odor, and fill the kettle with cold water. While the cabbage is cooking, you have made a pint of butter sauce, adding a teaspoonful of salt, and have prepared ½ cup of buttered crumbs. Cut the cabbage leaves slightly, placing them in a baking dish; pour the sauce over them, sprinkle the crumbs on the top, and brown the crumbs in the oven.

*Courtesy of New York State College of Agriculture at Cornell University.*

FIG. 104. — Baked beans. The beans are thoroughly cooked, but firm and whole.

**Baked beans.**

(A nitrogenous vegetable and a meat substitute.) This dish, known in old days in New England, was baked to perfection in the old brick oven. Baked beans seem difficult of digestion for some people. The mustard is supposed to be helpful, and adds something to the flavor. If the molasses is omitted, or but a small amount used, and if butter takes the place of pork or suet, the beans seem more digestible. In different parts of New England the dish is varied. Some people prefer rather dry baked beans; others wish them moist and very sweet.

*What and how much.*

1 quart of white beans
1 teaspoonful of soda
¼ lb. salt pork or more, *or*
4 tablespoonfuls of beef fat or butter substitute
Molasses, from two tablespoonfuls to ½ cup, *or none*
1 teaspoonful of mustard

*Utensils.* A kettle. A covered bean pot.

*How to make.* Wash and soak the beans in cold water over night. Pour off any water that remains. Put the beans into the kettle, cover with cold water, add the soda, and cook gently until the beans are slightly softened. The soda aids the softening. Pour off the water again, and put the beans into the pot. Mix the molasses and mustard with a pint of water, and pour this over the beans, adding more water if the beans are not covered. Place the pork or other fat upon the beans, and cover the pot. If fat other than pork is used, salt must be added to the beans. The beans should bake slowly for from 6 to 8 hours, and even longer in a very slow oven.

**Baked peas.**

Save old peas from the garden and dry. Bake as for beans. They soften sooner than beans.

**Vegetable soups.**

When milk is used with the vegetable, you have a most nutritious dish. When made with milk, they are a good dish for a winter dinner or supper. We do not seem to need or want them so much in hot weather. Use them, too, for the school luncheon.

Your father and brother may think that they do not like soup at any time. Give them this soup some cold winter night, with small pieces of toast in it. The luncheon club had it at school one cold noon. Barbara Groves made it for the home supper.

**Potato soup.**

*What and how much.*

| | |
|---|---|
| Potato | 1 cup, mashed |
| Milk | 1 quart |
| Flour | 1 tablespoonful |
| Butter | 1 tablespoonful |
| Salt | 2 teaspoonfuls |
| Celery stalks, cut small | 1 teaspoonful |
| Onion, chopped | 1 tablespoonful |
| Pepper, cayenne | To taste |

*Remarks.* If a thicker soup is desired, use more of the mashed potato. If celery salt is used, omit one teaspoonful of the salt. Less onion may be used, and the pepper omitted.

*Utensils.* Make the list yourself, after reading the directions for mixing.

*How to mix.* Boil and mash the potato, or use cold mashed potato. Heat the milk in the double boiler with the celery and onion. Add the milk gradually to the mashed potato, beating vigorously.

Put this mixture through a strainer into the double boiler, and reheat it. Melt the butter in a small saucepan, and stir in the flour; add *slowly* half a cup of the soup to the butter and flour paste; and then pour this slowly into the mixture in the double boiler, stirring all the time. The soup will be ready to serve in about ten minutes.

The important point in this recipe is the quality of the mashed potato. It should be dry and light. It may be made from hot, mealy baked potatoes. If cold mashed potato is used, this should be made light again with a fork. This amount will serve four to six people.

**Dried vegetable soups.**

Mollie Stark made a dried pea soup in their Aladdin oven, cooking the peas for some six to eight hours, and adding some

milk and seasoning at the end. Beans make excellent soup boiled with a little pork. It is impossible to give a rule for the amount of water or length of time. Water has to be added from time to time, and the beans can simmer on the back of the stove all day. The water can be allowed to boil away until the mass is rather thick, and the milk added just before serving.

**Cream of tomato soup.**

*What and how much.*

| | |
|---|---|
| Tomato juice | ½ cup |
| Milk | 1 quart |
| Flour | 2 tablespoonfuls |
| Butter | 2 tablespoonfuls |
| Salt | 2 teaspoonfuls |
| Bicarbonate of soda | ½ teaspoonful |
| Pepper, cayenne | To taste |

*Remarks.* Celery and onion may be added, but are not necessary. When you become expert, you will be able to use a larger amount of tomato juice, and even to omit the soda.

*How to mix.* This you will be able to work out for yourself. First perform this simple experiment. Stir together a tablespoonful of stewed tomato and a tablespoonful of milk. What happens? Heat this mixture. What further do you notice? How may you best extract the juice from the tomato? You have noticed the effect of the acid tomato upon the milk. The soda is added to prevent this effect. Will you stir the soda into the tomato juice or into the milk? Will you stir the tomato juice into the milk, or the milk into the tomato juice? Will you cook the mixture at all? How long before serving will you mix the two? When will you add the butter and flour?

The important point in this soup is to prevent the curdling; so you safeguard the milk at each step.

Squares of toast may be served with any of these soups.

### EXERCISES AND PROBLEMS

1. Send for a seed catalogue to some firm near home.
2. Try at least two or three new vegetables that you never have had for the home table.
3. Make a drawing of a garden that you might have at home.
4. What are some of the points that you must have in mind in selecting a garden plot?
5. Notice the insects and plant diseases that are most common in your own place. Ask your teacher to discuss these at school and to help you to find the pamphlets that will tell about remedies.
6. What do you throw away if you cook spinach in a large kettle of water and drain off all the water?
7. Take the rule for potato soup, and plan for other vegetables to use in place of it.
8. Do the same thing with the tomato soup. (Notice that in one you use a pulp and in the other a vegetable juice.)
9. Why is it important to have vegetables every day?
10. Which one of the recipes in this lesson gives you a meat substitute?

## LESSON 25

### DISHES FOR DESSERT

THERE are many desserts as nice, easier to make, and better for us to eat than pie. What are some that we can make?

Miss James explained to her class that puddings and pies contain good food material, and said once more that they are a part of a dinner or supper, not to be eaten when we are fully satisfied. The pudding or pie for dessert does not need to be expensive.

One of the schoolgirls asked if they might not have an exhibit of different desserts. This lesson has a few pictures of those that were displayed. By each plate there was a neatly printed card giving the recipe, the length of time taken to make it, and the cost. The amount of time that we put into cooking is something that we should be careful to watch. While we may enjoy eating a sweet dish at the end of the meal, how foolish it is to spend an hour or more in fancy cooking when there are other things to do that are so much more interesting and worth while. The dish may be attractive in appearance and yet quite easy to make. If you have an old-fashioned cook book at home, you will be interested to see how much time was sometimes given to the making of an elaborate dish to be eaten in a very few minutes.

**How many kinds of dessert are there?** Pies and tarts and puddings, both hot and cold; fruit in every shape; jellies, custards, ices and ice cream; nuts and raisins; crackers and cheese alone or with fruit. One very simple dessert for a hot day is sour-milk cheese, or cream cheese with crackers and a little jam or jelly.

Our desserts may be made of eggs, milk, cream, gelatin; stale cake and bread; baking-powder biscuit crusts, shortcakes, and pastry. We also use starchy substances,—cornstarch, arrowroot, tapioca, and manioca; and fruit of every possible kind. The animal products important in desserts, in addition to milk and eggs, are beef suet, butter, and lard.

You will find it very amusing to study several cook books, and see how many desserts can be made from

*Courtesy of Dept. of Foods and Cookery, Teachers College.*

FIG. 105. — A gelatin mold is an attractive dessert.

these materials. We have not room for many in this little book, but there are a few to try at home and, perhaps, at school.

**Fruit desserts.** In the lessons on fruit you have learned something about its use for dessert: fruit stewed, fruit scalloped, and fruit with a baking-powder crust. Here is another kind of fruit dessert for a hot day:

**Fruit sponge, with cornstarch.**

*What and how much.*

| | |
|---|---|
| Fruit juice | 1 cup |
| Water | 1 cup |

*or*

| | |
|---|---|
| Lemon juice | 1 or 2 lemons |
| Water | 2 cups |
| Sugar | 2 or 3 tablespoonfuls |
| Cornstarch | 3 tablespoonfuls |
| Eggs | 2 or 3 |

*How to make.* Cook the cornstarch and the water in a stewpan until the mixture is clear. Add the sugar and the fruit juice, and remove from the fire to cool. Beat the whites of the eggs very stiff. When the cooked mixture has cooled off slightly, fold in the beaten whites very lightly.

Pour this mixture into small cups, one for each person, or into a larger dish. The cups or dish should have cold water standing in them, while the pudding is making. Set the sponge away to become cold; on the ice if possible. Use the yolks for custard to serve with the sponge, page 245, *or* use them in cake or muffins.

**Lemon jelly.**

*What and how much.*

| | |
|---|---|
| Shredded gelatin | ½ box |
| *or* | |
| Granulated gelatin | 2 tablespoonfuls |
| Lemon juice | ½ cup |
| Cold water | ½ cup |
| Boiling water | 2½ cups |
| Sugar | 1 cup |

*How to make.* Soak the gelatin in cold water for 20 minutes. Add the boiling water and sugar, and stir until it dissolves. Add the lemon juice and strain into a mold and set away to harden. When it is stiff, loosen from the sides of the mold (a cloth wrung out of hot water may be needed). Turn upon a plate and serve with whipped cream or soft custard.

*Remarks.* When a less acid fruit juice is used, take more juice and less water. The jelly can be made spongy by beating in the white of eggs. When the jelly is firm, beat it and fold in the whites.

**Milk desserts.** On the farm where milk is good and plentiful we cannot use too much of it. If we tire of drinking it, then we may use it with other materials, and still have all the food value of the milk. We learned about renneted milk in Lesson 4.

Milk can be made into a molded pudding, stiffened with cornstarch, arrowroot, farina, sago, rice, gelatin, bread crumbs, sea moss.

**Flavors for milk desserts.** One may use vanilla, almond, and lemon essence; grated lemon rind or orange rind; stick cinnamon, or ground cinnamon, nutmeg; cocoa, or chocolate, or coffee; caramel made from browned sugar; and even a little fruit juice, if it is not too acid (the juice of a sweet orange with the rind is delicious in a milk pudding); raisins, figs, and dates.

**Cornstarch pudding.**

*What and how much.*

| | |
|---|---|
| Milk | 2 cups |
| Cornstarch | 4 tablespoonfuls |
| Sugar | 3 to 4 tablespoonfuls |
| Salt | $\frac{1}{8}$ teaspoonful |
| Chocolate or powdered cocoa (if desired) | 1 ounce |
| Vanilla | $\frac{1}{4}$ teaspoonful |

*How to make.* You have seen your mother make laundry starch, have you not? Perhaps you have done it yourself.

The cornstarch must be mixed with a little of the milk cold and then stirred into the hot milk to cook half an hour. When will you add the sugar and salt, and the chocolate if you use

*Courtesy of Dept. of Foods and Cookery, Teachers College, Columbia University.*

FIG. 106. — A cornstarch mold served with fruit.

it? Remember that if you put the vanilla in at first you will smell it as the pudding cooks. If it passes off as a fragrance, you will not have it as a flavor. When will you add it?

**Creamy rice pudding.**

*What and how much.*

| | |
|---|---|
| Rice (washed) | $\frac{1}{4}$ cup |
| Sugar | $\frac{1}{4}$ cup |
| Salt | $\frac{1}{8}$ teaspoonful |
| Milk | 4 cups |
| Cinnamon | $\frac{1}{6}$ teaspoonful |
| Grating of nutmeg | |
| Seeded raisins | $\frac{1}{3}$ cup |

*How to make.* This pudding needs long, slow cooking and is better when made from two or three quarts of milk. It is

easier to make, when you scald the milk and cook the rice in it until it begins to swell. Grease the baking dish; put in the rice with all the other materials. Cover the baking dish, and set it in a slow oven. This pudding cooks well in an Atkinson oven. Stir the pudding gently with a fork two or three times while it is baking. The baking should last for three or four hours or even more. At the very end remove the cover to brown the top, if you wish.

**Suet pudding.**

*What and how much.*

| | |
|---|---|
| Suet chopped | 1 cup |
| *or* | |
| Beef fat | ½ cup |
| Raisins, currants, and citron sliced | 1 cup |
| Egg | 1 |
| Sweet milk | 1 cup |
| Molasses | ½ cup |
| Soda | 1 teaspoonful |
| Salt | ¼ teaspoonful |
| Flour | 1 cup |
| Bread crumbs | 2½ cups |

*How to make.* Skin, wash, and chop the suet, and dredge with flour. Wash, pick over, and seed the dried fruit, slice the citron if it is used, and dredge all with flour. Stir together the milk and molasses, sift the dry materials with the flour, and stir the liquid into the flour slowly. Add the suet, beating the mass thoroughly, and last put in the fruit, sprinkling in both the suet and the fruit as you stir. Fill a greased mold or pail ⅔ full, close tightly, and cook in a kettle of boiling water for three hours. Serve with foamy sauce.

**Baked Indian pudding.**

This is one of Grandmother Stark's specialties which she makes for church suppers and sends to her friends sometimes as

a present. Grandmother Stark loves to tell of the days when she used to see it baked in the old brick oven, and she insists that even the Atkinson cooker does not give quite the same flavor. She thinks, too, that the pudding is not perfectly made with less than a milk pan full of milk and with old-fashioned meal; but she is much pleased when other people praise her puddings made of a smaller size. It is hardly worth while to bake it in a pan smaller than the two-quart size. Use an earthen baking dish.

*What and how much.*

| | |
|---|---|
| Milk | 2 quarts |
| Indian meal | ½ cup (or even ⅓) |
| Molasses (dark colored) | ½ to 1 cup |
| Salt | 1 teaspoonful |

*How to make.* Scald half the milk, stir into it the meal mixed with a little cold milk, and cook until the mixture thickens a little. Add the molasses and salt. Pour into the greased baking dish, add the rest of the milk, cover, and put into a very slow oven. To be perfect this pudding should bake from six to eight hours, or overnight in the Atkinson oven. Brown the top at the last. It can be eaten hot or cold. This slow cooking seems to dissolve the Indian meal, whey is formed, and when the pudding cools this makes a jelly.[1]

**What shall we do about pies?** When Miss Travers talked about pies to the Woman's Club at one of their meetings in the Pleasant Valley School, a very lively discussion followed. Mrs. Groves said that her husband

[1] Some people add an egg and butter, but this is not necessary. Others like the flavor of a little ginger. A fairly good pudding is made by using much more meal, cooking the milk and meal longer in a double boiler, and then baking for an hour, but it is very inferior to Grandmother Stark's pudding.

wanted pie three times a day. Another of the ladies said that her husband would like pie perhaps five times a day, between meals as well as at meals, but that the doctor had advised him to go without pie altogether.

Miss Travers said that it is true of pie, as of any other food containing a large amount of fat and sugar, that we should not eat it too often. The fat and sugar give the pie a high food value. If the crust is porous and light, thoroughly baked, and then thoroughly masticated, it has its place in the list of dishes from which the housekeeper makes the plans of her meals. A little baking powder makes the crust more porous. Do not eat pies every day, and remember to have pie at the end of the meal where there is not a large amount of protein and fat in other dishes.

**Some suggestions for making pies more digestible.**

1. With fruit pies use a deep dish and have a top crust over it.

2. When you want a pie without a top, like pumpkin or squash pie, bake the under crust first, brushing on a little white of egg before you bake it. Then fill and bake again.

3. Bake the pie crust in squares or diamonds or rounds by itself, and serve on a plate with cooked fruit.

**What can we use in place of pie crust?** A baking-powder crust makes a very good substitute for a pie crust, and, while your father may not like it so well at first, he probably will find it much better for him in the end. A light baking-powder crust can be used for the

*Courtesy of Dept. of Foods and Cookery, Teachers College, Columbia University.*

FIG. 107. — Squares of pie crust served with jam.

*Courtesy of Dept. of Foods and Cookery, Teachers College, Columbia University.*

FIG. 108. — Squares of pie crust served with fruit.

top of a fruit or meat pie. Bake this kind of crust in a jelly-cake tin, making it rather thin, until it is quite

brown. Split, and put fruit between the crusts. This becomes a shortcake when more butter is used, but the ordinary baking-powder crust is rich enough for every-day use. The crust can be baked and cooled and served cold with the fruit, or it may be reheated and served.

**Making ice cream.** If you have ice on the farm, you will find it is quite easy with a good freezer to make ice cream or sherbet on some hot day. There are a number of freezers for sale that are not expensive, and that will do the freezing in about twenty minutes. Mollie Stark and her brothers make their ice cream without a freezer, using a tin pail with a cover set in a tub. Mollie and her brothers divide the work in this way: the boys bring a piece of ice from the icehouse, put it into a heavy bag, and pound it. Mollie makes a custard by the recipe that follows, and when it is cooled off she puts it into the tin pail, but she does not have the pail more than two thirds full. Can you tell why? The boys mix one part of coarse salt with three parts of ice, and cover the bottom of a wooden box with this. Mollie ties paper tightly over the cover of the pail, sets it in the box, and then packs the ice and salt all around it. The box is four or five inches bigger than the pail. Some of the ice and salt is put on the cover. Paper is laid over the salt and a clean old bed quilt is put over the whole. At the end of about fifteen minutes Mollie opens the pail, stirs the freezing custard with a spoon, and covers it up again as before. This has to be done several times, depending of course upon the

amount of ice cream that is being made. This method does not make the ice cream so smooth as the freezer where you turn the crank all the time, but it makes a very agreeable dessert. Here are two rules that Mollie uses.[1] When the price of eggs is high, Mollie makes a mixture like a cornstarch pudding, using less cornstarch to the quart, and flavors it with chocolate or coffee, or stirs in some cut-up fruit half an hour before the ice cream is finished. Mollie sometimes uses orange juice or the sirup from canned peaches or berries in the sherbet.

**Custard ice cream.**

*What and how much.*

| | |
|---|---|
| Milk | 1 quart |
| Sugar | ½ or ¾ cup |
| Eggs | 2 |
| Vanilla | 1 tablespoonful |

*How to make.* Scald the milk and sugar together. Beat the eggs and stir a little of the hot milk into them, and then pour the beaten eggs into the hot milk. Stir steadily until the mixture thickens a little on the spoon. If the custard begins to curdle, take it off and beat it rapidly with a Dover egg beater. When it is cool and ready for freezing, stir in the vanilla.[1]

[1] When Mollie wants to make a *soft custard*, she uses this rule, taking a pint of milk, two tablespoonfuls of sugar, one tablespoonful of cornstarch, and two eggs. You have made cornstarch pudding. Which will you cook first in the milk, the cornstarch, or the eggs? Use only half a teaspoonful of the vanilla or other flavoring. This soft custard is very nice poured over cut-up oranges, or bananas, or peaches, or canned fruit.

**Milk sherbet.**

*What and how much.*

| | |
|---|---|
| Milk | 4 cups |
| Sugar | 1½ cups |
| Lemons | juice of 3 |

*How to make.* Mix juice and sugar, stirring constantly as you slowly add the milk. If the mixture should curdle, the curdle will disappear when frozen.

EXERCISES AND PROBLEMS

1. Look in the dictionary for the meaning of the word "dessert."
2. Study a cook book and see what recipes there are for using milk in a pudding.
3. In what puddings can you use skimmed milk just as well as whole milk?
4. Explain why we should be careful not to eat pie too often.
5. Explain why the can of the ice cream freezer must not be filled up to the top before freezing.
6. Can you explain why a mixture of ice and salt will freeze the cream when ice by itself would only cool it? (See some book on physics.)
7. We have cooked several kinds of food in a number of different ways. Make a list of cooking processes that we have used. After you have done this, look on page 294.

## LESSON 26

### COOKING APPARATUS

How can we save heat at dinner time, and other times?

It is at noon of a hot summer day that preparing dinner seems such a burden, and oh! how hot that stove makes the kitchen. The class talked one day

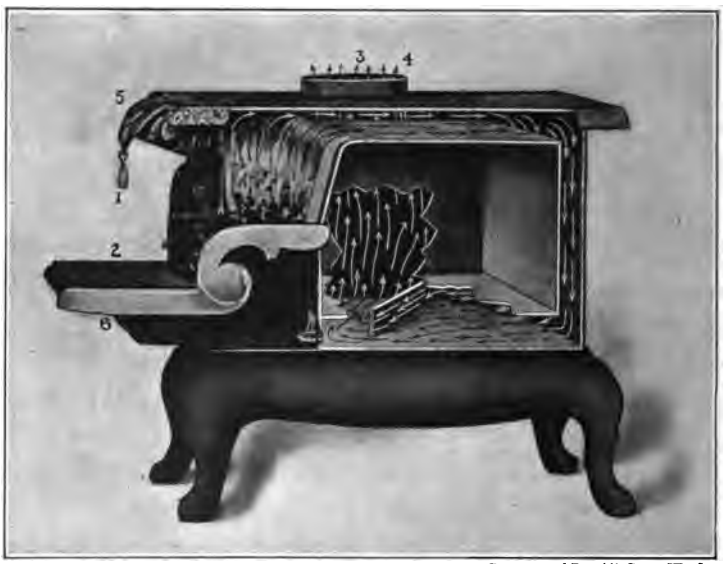
about apparatus that would cook the food without heating the cook.

**Different ways of having heat for cooking.** How interesting it would be if, at the moment you are reading this page, you could see all the ways in which people are cooking. Some one, somewhere, has a camp-fire with a kettle boiling over it; and, far away in some old-fashioned house, dinner is being cooked by the fire in the open fireplace. Somebody is turning a button, and presto! a current of electricity runs along a wire fastened to a cooking utensil, and there is all the heat needed and no more, and no ashes, and no hard work. And between these two, the newest and the oldest fashions, there are coal stoves and wood stoves, natural and manufactured gas, kerosene and gasoline stoves, and steam cookers; and we hear about fireless cookers and Atkinson cookers.

**What are you using?** Coal or wood in the winter for warmth as well as for cooking? It needs a well-made stove for either, for no one can be expected to do good work with a poor stove. With the coal stove you must bring in coal and take out ashes, and space must be given to the coal bin and ash pit. Large ranges, resting upon the floor, have a "dump" which empties the ashes directly into the ash box in the cellar. A range the size of the one in the picture (see over) would serve for a family of five or six. It requires from 2 to 3 hods of coal per day. A hood should be placed above a large range, whether coal or wood, with a pipe into the chimney.

Here is a picture (Fig. 109) showing a section of a coal stove that can be used for wood with a different grate.

**The coal range.** The coal box at (1) has a lining that keeps the iron from burning out. The air enters at (2)




*Courtesy of Detroit Stove Works.*

FIG. 109. — A modern coal range, showing the parts and the air circulation.

and passes out at (3), when the fire is first made. When you want to heat the oven, a damper is closed at (4), and the heated air then passes around the oven in the direction of the arrows. The coal is put in at (5), and the ashes shaken down at (6).

Do you know that this kind of stove lets most of the heat go up the chimney, although less than in the

old-time fireplace? We have to box in the heat to keep it.

**Cooking by kerosene.** On page 12 is a picture (Fig. 4) of a kerosene stove with wicks where the kerosene is made to burn with a blue flame.[1]

A blue flame always gives more heat than a yellow one. A yellow flame gives light, and it smokes more easily than the blue. The flame on this stove is very hot, the oil burns out slowly, and one gallon will last about 15 hours. If one is careless and raises the wick too high, then the flame grows yellow and smoky, and it spoils the wick and makes much trouble. Notice the picture (Fig. 4) of the oven which is placed on top of the stove for baking.

This was one of the first summer comforts that the Stark family tried, and they were surprised to see how seldom a fire in the wood stove was needed.

A friend who was interested in the school lunch gave a stove of this pattern to the Pleasant Valley School. The members of the Lunch Club took turns in keeping it clean, and they found that it saved time in the end to attend to it daily.

**Catching heat and keeping it in a box.** The picture (Fig. 110) that follows, shows one way of doing this. This plan was invented by Mr. Edward Atkinson of Boston, who wanted to teach us to save fuel and to improve some of our foods by cooking them slowly. The

[1] In many parts of the country the use of gasoline is forbidden. Stoves are made especially for it.

heat comes from a round-wicked kerosene lamp. If you try to hold your hand over the chimney of a large lamp, you realize how much heat is given off; really enough to cook with. Around the iron oven which holds the food there is a box or cover, large enough to leave a space between the inner oven and the outer box; and the outer box is made of something that does not let the heat through; so the heat is in a trap, and does the work of cooking.

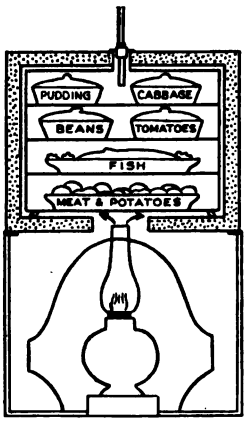



FIG. 110. — The Atkinson cooker, a plan for catching heat and keeping it in a box.

Food cooked in this way has a fine taste, because the flavor has not gone off in the air.

**A homemade Atkinson cooker.** The Stark family made a cooker at home. They could not have the same kind of oven, because in the Atkinson ovens that one buys the outer box is made of a kind of fiber or pulp; but they talked the matter over at home, and Mollie and John asked this question at school, "What can be used to keep heat in or out?" Why do you have a wooden handle on a poker for the fire? Why do you use a cloth holder for a flatiron or any hot metal? Why do you want a blanket over you on a cool night? Some substances become hot, carry heat, and lose heat quickly; and these are called "*conductors*" of heat: others heat slowly and cool slowly; and those are "*nonconductors*."

For our oven cover, then, we want a nonconductor. The Starks took such an oven as we use on a kerosene stove; they found a wooden box larger than the oven, and lined it with the kind of tin that is used for roofing. They made a hole in the bottom of the wooden box, where it would come just over the lamp, and on the bottom they put the tin both inside and outside the box, that the wood might not catch fire. As you know, wood is a poor conductor; but more covering is needed for an oven than the wooden box only.

The boys covered the box with many layers of paper, put on a neat outside cover of white oilcloth, and made a stand to hold the box, with a shelf below for the lamp. Whenever you want to keep a surface from giving off heat, paint it white or use a white cover. A shiny black surface will radiate heat. This has been proved by experiment.

At first Mrs. Stark was disappointed because the food came from the oven a pale rather than a rich brown.[1] She found that, like all other conveniences, the cooker did not do all the work. But Mr. Stark declared that he should never know the old fowl cooked this way from a spring chicken, for it was so tender; and that the brown bread, beans, and Indian pudding tasted more like the old-fashioned kind than any he had eaten for years. Slow cooking is the secret, or charm, in many dishes,

[1] The ready-made oven has a hole in the top with a cover, and the cover can be taken out when you want to brown something over. A hole can be put in the homemade cooker.

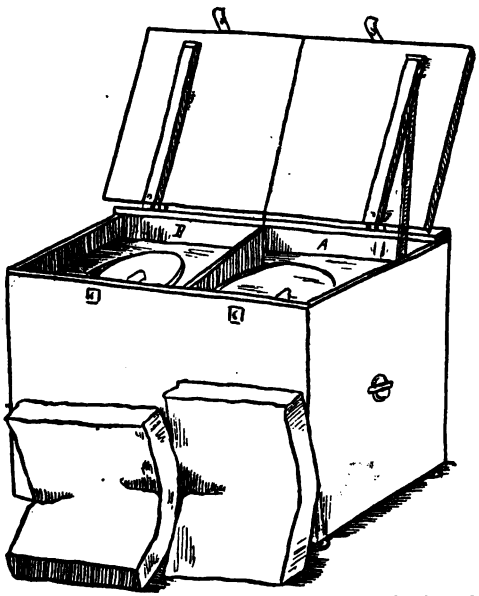
developing a richness of flavor that intense heat does not. Mollie became very expert in using this cooker, and could get a whole dinner with it, starting the cooking early in the morning, or boiling or browning one or two things on the other oil stove. This gave time for work in the garden, or for sewing and reading under the trees.

They were not afraid of leaving the lamp burning all night; and it was comfortable on a winter morning to take from the oven, "piping" hot and ready to eat, the cereal, and scalloped potato, and fish started the night before. If you could visit the Stark family, they would advise you to have such a cooker, too.

**Fireless cookers.** One day at school the Pleasant Valley pupils made a fireless cooker. This kind of cooker has another way of keeping heat in a box, and it was used many years ago in Sweden. Some traveler in Sweden describes the way he saw a fowl cooked. The dressed fowl was put in a kettle of water, the water was brought to the boiling point on the stove or fire, and then the kettle itself was covered and placed in a box, and the box was covered with some nonconducting material. Where is the heat? In the kettle of water; and, as it cannot escape, it cooks the fowl! Here is a picture (Fig. 111) of a fireless cooker that can be made at home.

**A fireless cooker made at school.** The pupils of the Pleasant Valley School made one from two wooden boxes, one three or four inches smaller than the other.

They filled in the space between with sawdust below and around the sides. The inner box was lined with white table oilcloth. They were careful to take a box of the size and shape to hold two pails. They could not put sawdust over the pails, and so they made a cover from an old clean blanket, and covered it with the table oilcloth, too. When the hot kettles were placed in the inner box, the woolen cover was laid over them, and the larger box cover fastened down. The outer box was painted white.



*Courtesy of Winthrop Normal and Industrial College, Rockhill, S.C.*

FIG. 111.—A fireless cooker made at home.

Some of the ready-made cookers have a place to slip in a hot iron or soapstone, and hot bricks can be put underneath the kettle in the homemade.

**Other ways to make a fireless cooker.** There are other things of which the home cooker can be made. Agnes Groves used an old trunk for the outer box, and painted it, as it looked rather shabby. The space be-

tween the trunk and the inner box was filled with paper, pressed in firmly. She pleased her mother by having a stew for dinner one day. First she browned the meat and vegetables in a frying pan on the kerosene stove, put them in a hot earthenware jar with the seasonings, covered them with boiling hot water, covered the jar closely, set it in the cooker on a brick heated on the other burner of the oil stove, and closed the cooker. This was done by half past seven, and at twelve o'clock the stew was ready.

There was room for another kettle in the cooker, and in that Agnes put peas shelled the evening before. Agnes also tried cooking cereal overnight, but she was careful to let the cereal boil on the oil stove long enough to thicken before it went into the cooker, and then the kettle of cereal was placed in a larger kettle of hot water, like a double boiler. She thought the cereal was better when the hot brick was used.

*Courtesy of the Calorie Co.*

FIG. 112. — One fireless cooker on the market.

Agnes and Marjorie used to compare the "fireless" and the Atkinson cooker, and they decided that the Atkinson can do more kinds of work than the fireless,

although the Atkinson uses more fuel. The Atkinson cooker is sometimes called the Aladdin oven. Can you tell why? Did you ever hear of Aladdin and his wonderful lamp?

**Steam cookers.** Barbara Oakes reported at school that her mother has no patience with either of those contrivances, but that she likes a steam cooker in hot weather, and can get a whole dinner over one burner of the kerosene stove. On page 98 is a picture (Fig. 48) of a steam cooker like Mrs. Oakes'.

Some people like one kind of machine and some another; but we may all help ourselves greatly if we try some experiments, and do not expect too much from any one contrivance.

EXERCISES AND PROBLEMS

1. Can you explain why the fireless cooker will not "brown" food? Can you ever "brown" anything in water?

2. Why does a hole in the Atkinson cooker at the top help the browning process?

3. Make a sketch showing a cross section of the cooker made at the Pleasant Valley School.

4. Make a list of nonconducting materials; of good conductors.

5. Which is a better conductor of heat, air or water?

6. Will a kettle of hot food cool faster in the air or in running cold water? Why?

7. Bake one potato, and boil another of the same size. Which cooks faster? Why?

8. How much oil does your illuminating lamp hold? How long will it burn? Find the cost of kerosene, and then you can tell how much it costs to run the Atkinson cooker per hour.

9. How much does it cost per hour to run a blue-flame oil stove?

10. Can you find out how much it costs per hour for coal or wood?

## Lesson 27

### The Care of Food

How shall we care for food after dinner?

This is a question after every meal; but there is usually more food to put away after dinner, and more careful planning is needed then.

When Mollie and Marjorie cooked the dinner we studied in Lesson 22, they began to plan for the care of food afterward, at the very beginning of operations, by seeing that there were no flies to light on any food placed on the kitchen table. The home-making class had discussed the care of food in the home, and Mollie and Marjorie found that they could apply it all to this particular dinner.

**How shall we take care of our food?** Here is a simple rule. Keep food *clean;* keep food *cool;* keep food *dry;* keep out insects, mice, and rats.

**How shall we keep food clean?** Let us begin with ourselves, the cooks. Mollie and Marjorie were pleasant to look at; they were so shining with cleanliness themselves. Marjorie had washed her hair the day before when she came from school; but before beginning work she brushed it tightly back, braided it, and tied a clean ribbon around her front hair to keep back stray

locks. Both of the girls, of course, had clean faces, their dresses and aprons were spotless, and each clean apron had a pocket in it, with a clean handkerchief in the pocket. They scrubbed their hands, used toothpicks for their fingernails, and pinned on fresh hand towels at one side of the apron. Mollie said when she washed her hands before she sat down at the dinner table that she believed it was the twelfth time at least. A safe rule is this: whenever you are to touch food with the fingers, wash them. It is not considered good manners when in company to touch one's hair or face, and one should never handle food after touching one's person in any way.

*Courtesy of Mrs. Hetty S. Browne.*

FIG. 113. — Neatly dressed for cooking.

Of course, Mrs. Allen's kitchen and pantry were spotlessly clean after the breakfast; so there was no cleaning to do after the last fly had been banished.

Just as this had been accomplished, Frank Allen came in with the sweet corn and potatoes, and in came a fly, too! So Frank killed the fly on the kitchen table, and then washed off the table at his sister's request. There was a pan in the sink to hold clean soapsuds for washing off whatever needed the washing.

**A place for washing hands and face.** Just outside the Allens' kitchen is an entry where washing of hands

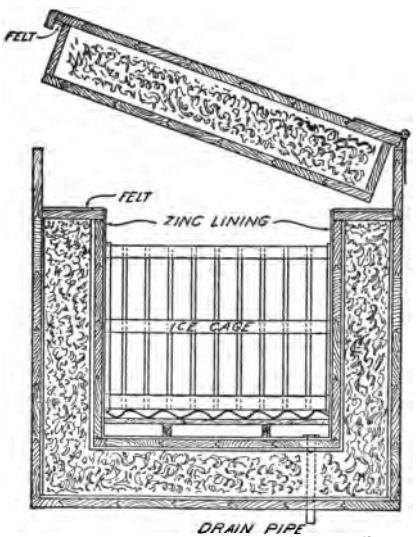
and face, and brushing hair can be done, because it is not a cleanly habit to do this in the kitchen. Before the Allens had running water, there was a stand in this entry, with a basin for the hands and face, and a pump outside; but, when the water was put in, a basin with running water was placed in this entry, too. There is a looking-glass, and in a basket hanging on the wall below are some small towels made of the toweling used for roller towels, as Mrs. Allen does not believe in having different people use one towel. Each towel is large enough for wiping face and hands, and is used only once and thrown into another basket. Mrs. Allen has a washing machine, and puts these towels through a wringer to smooth them, and does not iron them. Muddy shoes must be wiped off outside, or, when they are very dirty, they are changed for comfortable dry shoes that hang in a shoe bag on the wall of the entry, and the muddy rubbers and boots are left in the shed. The boys thought this very fussy at first; but boys do not really dislike being clean, when it is not too much trouble, and besides they found the dry shoes very comfortable. To keep all dirt out of the kitchen is one way to keep food clean.

**Washing off food.** Even when we gather our own fruit and vegetables with clean hands, there needs to be a careful washing in clean water to free the food from grit and small insects. A small quantity of salt or vinegar in the water helps to remove any tiny insect.

When Marjorie began to prepare the piece of meat

for the pot roast, she held it under the faucet and thoroughly washed off the surface of the meat. If there had not been running water, she would have washed it off in a pan of water, with a little salt added. Mollie remarked that the butcher was very particular himself about the meat, but Marjorie said that one could not be overclean with meat.

**Keeping food cool.** When the table was cleared after dinner, the most important point was putting away the foods that would most easily spoil, — the meat, the butter, the milk. The meat had been hot when it was put on the table, and it was still warm. Mrs. Allen did not put it into the ice box warm, but, as there were no flies in the kitchen, she stood the meat in the breeze by the window to cool it off. If there had been no breeze, she would have returned the meat to the pot and set the pot in a pan of water.

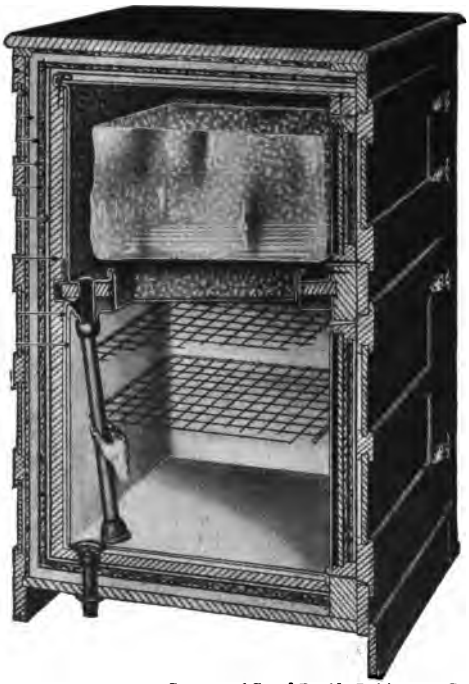



*Courtesy of New York State College of Agriculture at Cornell University.*

FIG. 114. — Mrs. Groves has an inexpensive home-made ice box.

**Ice for keeping food.** Ice is one of the great comforts in summer, and is a safeguard of our health. Remember in the lesson on

preserving fruit that we learned how the bacteria that spoil our food do not flourish in the cold. More and more are farmers planning to cut ice and store it. Mr. Groves of Pleasant Valley dammed up a brook, making a small pond, cleaned out the vegetable matter, and found that he could take enough clean ice from the pond to last all summer. Mr. Groves fenced in his ice pond to keep out the farm animals, and he put in the dam at a spot in the brook above the place where the cows and horses go to drink. He made a double wall and roof to one small building on the place, and packed the ice down in sawdust. Sometimes two or three landowners can combine in ice cutting. One man in Pleasant Valley adds to his income by selling ice to his neighbors.

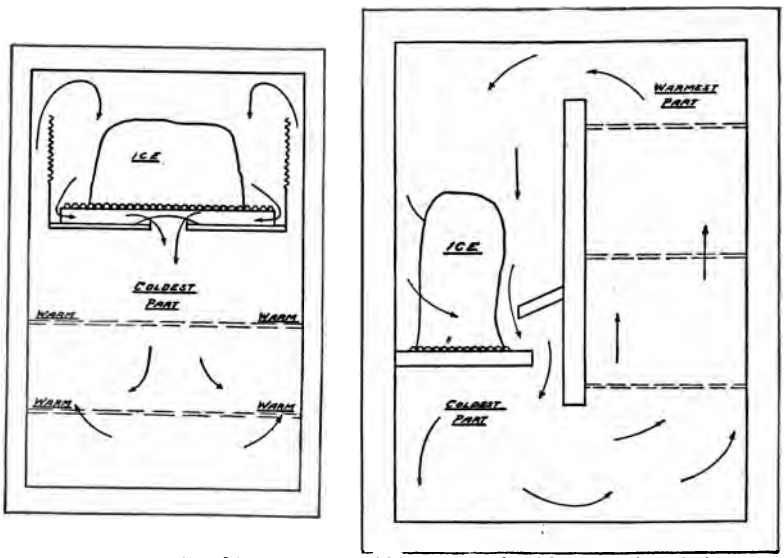


*Courtesy of Grand Rapids Refrigerator Co.*

FIG. 115. — Mrs. Allen's refrigerator is built with double walls made of nonconducting materials.

The farmers who sell milk, cream, and butter find that the better condition of their products makes it pay to have ice.

**A well-built refrigerator.** Mrs. Allen was very happy with her new refrigerator, and told Mollie that the difference between a summer with ice and without ice, was astounding. The picture (Fig. 115) shows Mrs. Allen's refrigerator, which stands in the coolest part of the pantry. It is important to have air circulating in




*United States Department of Commerce, Circular of the Bureau of Standards, No. 55.*

FIG. 116. — Diagram showing the circulation in two used types of refrigerator.

the refrigerator. The drawings (Fig. 116) show the movement of the air in two refrigerators and the coolest place in each.

Mrs. Allen's refrigerator is built with double walls made of nonconducting materials, and has ten layers of such in the walls, one of them a closed-in air space. The closets for the food are enamel lined. This is nonabsorptive, and may be kept perfectly clean. A large refrigerator is more economical of ice than a small one, and in the end more than balances the few dollars extra that must be paid for the larger size. Select the coolest spot that you have for the refrigerator.

**Care of a refrigerator.** Always wash off the block of ice before putting it into the ice chamber. Wash out the ice chamber once a week, and pour a solution of washing soda down the waste pipe. The food chambers should be washed out once a week and dried, and no spilled food allowed to remain a moment. Do not leave the doors open. Have a strong ice pick for breaking ice.

And when we cannot have ice? Perhaps there is a well. Then you can hang very *clean* pails or glass fruit jars in the well that will hold some food at least. This is a simple old-fashioned way; but be sure that the ropes are strong, and the pails tightly closed. It is always a sad event when milk spills into the water.

If the water comes from a spring in pipes, you have an overflow that can be used for cooling food.

**What shall we say about a cool cellar for food?** For the sake of the family the cellar should be dry, well aired, and not cold and damp. Even a dry, cemented cellar is cooler than the ground floor of the house; but

it is not cold in the way that the old-time farmhouse cellar used to be. When the Stark family made their old cellar into a dry new cellar, they felt that they could not plan for an ice house that year. They dug a place below the level of the cellar and cemented it; they cut a trapdoor in the kitchen floor and made a set of shelves to run up and down on pulleys from the kitchen into the small subcellar. This may seem more trouble than it is worth, but Mrs. Stark and Mollie did not think so.

A box fastened outside the window by strong iron brackets gives a handy place for cooling food, and for keeping some foods that do not spoil quickly. It is easily made from a water-tight wooden box, painted outside and in, with the opening toward the window, having a curtain of table oilcloth. A piece of wire netting set in the bottom of the box lets in the air.

*Courtesy of New York State College of Agriculture at Cornell University.*

FIG. 117. — These shelves inside a window give a place for cooling food. Netting must be used to keep out flies.

Remember, too, that *evaporation cools*. In tropic countries water is cooled in porous earthen jars which

hang in the veranda. When all other means are missing, put the food to be cooled in a jar, wrap a clean cloth around and over the jar, put one end of the cloth in a basin of water, and stand all in a window.

**Keeping food dry.** This means having dry walls and floors. Have jars and boxes for keeping your materials, label them, and place them in neat rows. Even when food of certain kinds should be kept moist for a time, they still should stand in a dry place. For example, we may wish to keep bread moist by wrapping it in paper, but we must keep the bread box dry and clean.

**Mice and insects.** It must, indeed, be a well-built house that has no visitors of this kind. Watch for cracks and holes; and, if you find them, use metal over them. Try traps for mice and rats, and buy poison recommended by the druggist; only be careful, then, of other animals.

The Woman's Club of Pleasant Valley offered a prize for something that would actually keep off ants, and as yet no one has taken the prize. Look for ant hills outside and pour in kerosene. In the Starks' old home there were tiny red ants that had their home in some timber that could not be reached. The only trap for them was a saucer of fat in the pantry, in which they collected by thousands. Borax and other powders are recommended, but Mollie Stark remarked that the Stark ants seemed to be especially fond of borax. In one old house they could do nothing better than to put each

of the four legs of a table in a pan of water, and stand the food on the table.

**Cleaning off the table.** Mollie and Marjorie put the scraps of food from the plates into the clean-food scrap pail to be taken out to the chickens. The pieces of bread from the bread plate were returned to the bread

*Courtesy of the New York Agricultural College at Cornell University.*

FIG. 118. — A broad piazza for rest after work.

box to be used for toast, and the butter was put in a small bowl to be used for cooking. The left-over mashed potato was kept for potato cakes; and the meat and dessert were finally set away in the refrigerator. The sweet corn was all eaten, but the cobs were given to the chickens to enjoy. Later they were to be collected and burned.

You know that the food remnants, when the farm

animals have had their turn, will serve as fertilizer for plant life. After the bones have been picked, keep them together in a barrel, and finally bury or burn them. Have a compost heap properly covered where the uneaten fragments will decompose and make fertilizer, or bury them at once if preferred.

When the two girls had finished all the work, and went to the broad piazza for rest, Marjorie said, "Isn't this fine training for a girl! Better than mathematics." And Mollie added, "Do you know, there's a kind of mathematics in it all, I do believe." Then Grandmother remarked, "Any reason why you shouldn't have the book kind and this kind, too?"

### EXERCISES AND PROBLEMS

1. Why is it so important to take pains in caring for food after every meal?
2. How do you dispose of food waste at home?
3. What do you do with tin cans when you use canned food?
4. Explain why food must be kept cool and dry.
5. How does a refrigerator keep food cool?
6. Can you explain what Mollie meant when she said there was a kind of mathematics in getting a dinner?

### REVIEW

1. Give a simple rule for making a dinner menu.
2. Plan the work in preparing a dinner for next Saturday.
3. Do you think we need meat as a food?
4. Is there anything to be careful about in buying meat?
5. Give two experiments that show the effect of different methods of cooking upon meat.

6. When meat is tough, can you improve it by cooking?

7. Give directions for cooking tender meat.

8. You have a five-pound roast. Tell exactly how to prepare it.

9. You are planning to have steak for dinner. How will you cook it?

10. In the country where one raises beef or pork, a large quantity may be killed at one time. How may this meat be preserved?

11. Tell how to cook corned beef.

12. Do you know what foodstuffs vegetables give us?

13. What does cooking do for vegetables?

14. Tell in what way and how long to cook all the common vegetables.

15. Tell how to make two milk desserts and two fruit desserts.

16. Have you ever run a fireless cooker? Can you describe such a cooker?

17. Think of what you can do to be sure the food in your home is clean.

18. What conveniences will you have for keeping food clean?

19. What are some of the important things about using ice? About the care of the refrigerator?

20. What are the points of a good cellar?

21. What can we cook on Saturday to save work on Sunday?

# CHAPTER VI

## OTHER FACTS ABOUT FOOD

### Lesson 28

#### A STUDY OF 100-CALORIE PORTIONS

**How may we know just how much food to give to the family every day, and how can we measure it?**

One rainy Saturday when Marjorie Allen was looking over her notebook of lessons on foods, sanitation, and cookery, and putting together in one place everything that she had studied and learned about meals from her teacher and from her mother, she found that there were facts enough to fill several pages.

If you yourself will review the lessons in the five chapters of this book and recall the talks at school with your teacher, you will find that you have learned quite a little about the three meals a day and your own school luncheon.

When Marjorie had finished this task, however, she sat quietly a few minutes, looking rather puzzled; and then she asked the question at the beginning of this lesson.

Mrs. Allen replied that she herself had learned by experience, and that in a large family the left-overs can always be used in some good way. But Marjorie had in mind something more exact than this, as a result of the talks at school about food for body building and energy; and she already had grasped the idea that different people require not only different kinds of food, but different quantities.

"It seems to me," said Marjorie, "that there must be some way to measure just the amount for Grandmother, for you and Father, and for all of us children."

"Why don't you ask Miss James?" said her mother.

"I am so glad you wanted to ask that question," remarked Miss James, when Marjorie brought this thought to the class.

**How is temperature measured by a thermometer?**

"How would you explain the use of the thermometer to some one who did not understand?" was Miss James' first question.

We learned long ago that the amount of heat in things around us changes from time to time, sometimes very quickly. Take water, for instance: how rapidly it heats and begins to boil over a good fire, and how soon it freezes when the weather is cold. The words in common use for the different degrees of heat are cold,

cool, hot, warm, tepid, lukewarm, and so on. These words are not exact, however; and people found it necessary to measure heat in some definite way. Mercury and alcohol are substances that change very rapidly with only a slight increase or decrease in temperature. They change in bulk and expand or shrink. Look at a thermometer, and see that the mercury is inclosed in a bulb and a tube, fastened upon a scale. Who made the scale? Several people, and so we have thermometers (heat measures) of more than one kind. The Centigrade is the best because it is the simplest. The freezing point of water is called zero; and the boiling point of water, 100; and there are one hundred steps (Centigrade) between, which we call degrees. Scientists prefer to use Centigrade. We should become familiar with the Centigrade thermometer in daily life. In America, however, we are slow to change in matters of measure and weight. The French, who planned the decimal system of weights and measures, and who use them in buying and selling, are much more sensible than we. In America and England, the Fahrenheit is used. This scale was made and used by Gabriel Daniel Fahrenheit. The freezing point is at 32° above the zero of this scale, and the boiling point at 212° above; and there are 180 degrees (Fahrenheit) between. So you see, one degree Fahrenheit is equal to $\frac{9}{5}$ degrees Centigrade.

Here is the picture (Fig. 119) of a thermometer with both Fahrenheit and Centigrade scales. You should

learn to use the latter just as soon as possible. Do you not consider decimals easier and more convenient than common fractions?

The degree on the scale of a thermometer is one kind of heat measure. We have another measure for the needs of our bodies and the energy contained in our foods; for we calculate the amount of food

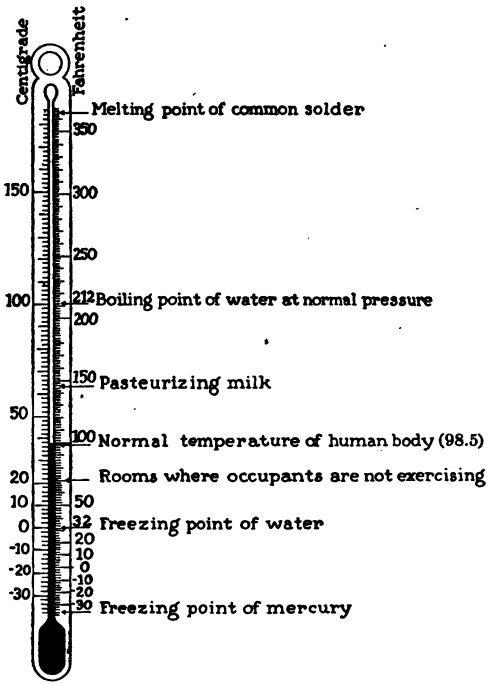
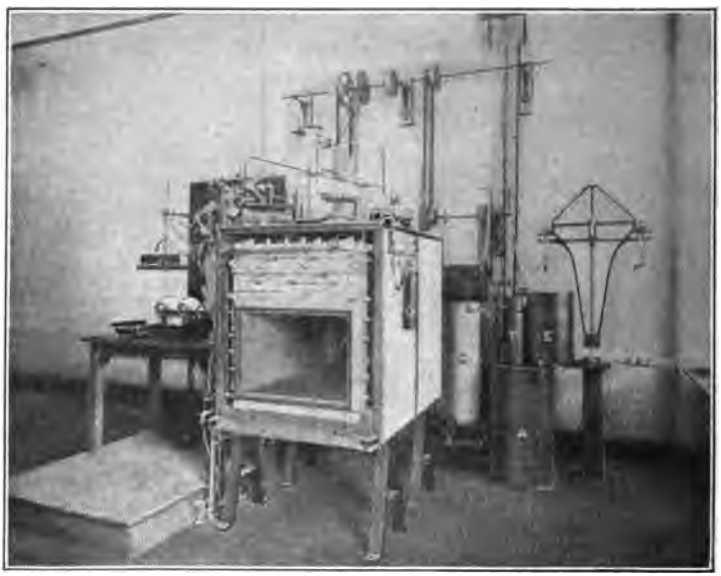



FIG. 119. — Two common temperature scales, viz. Fahrenheit and Centigrade. On the Centigrade scale the freezing point and normal boiling point of water are, respectively, 0° and 100°; on the Fahrenheit scale these points are 32° and 212°; thus 1° Centigrade is equal to 1.8° Fahrenheit.

we need by the amount of energy it will furnish the body.

**What is a calorimeter?** Scientists have learned to measure heat given off by shutting up some person, or



*Courtesy of Professor Graham Lusk.*

FIG. 120. — Respiration calorimeter, open. From the "Journal of Biological Chemistry."

lower animal, in a machine where he has air and is quite comfortable for a time. Here is a picture (Fig. 120) of one machine called a calorimeter (heat measure) for a small animal. You can see how elaborate and delicate a machine it is, and it does exactly record the

heat coming from the body of the animal shut into this cage. When you are in high school or college, you can understand the workings of the calorimeter. But we will now accept the fact that the scientist can measure in a calorimeter the energy of our bodies and the amount of energy given off a day.

Then, too, the scientist finds the energy in the food, by burning it in another kind of machine which also measures the amount of heat in some one kind of food. This has been done with all the common materials.

**What is a calorie?** The scientist can now say of a given person that he needs so much energy daily, and that a certain amount of a certain food will give so much energy. But what words can he use to tell you and me? The degree Centigrade will not measure this. So the scientist says, " I must have a *heat unit*, something like the degree of a thermometer scale, or the inch on a yard-stick. I will take for my heat unit the amount of heat required to make one pound of water warmer by four degrees Fahrenheit; that is, the amount that will raise its temperature four degrees, or a gram of water one degree Centigrade. This unit I will call a *calorie* from the Latin word for heat, ' calor.'"

Miss Travers explained the calorie quite simply one day at the Mothers' Club; but one of the mothers said that her husband and sons were six feet tall, weighed about one hundred eighty pounds each, and were all satisfied with the good square meals she gave them,

and that she shouldn't bother with this kind of thing. Mrs. Allen said very quietly that her husband found it convenient to study calories in feeding his pigs, and that she herself thought it might be well to try this method with her family! So Mrs. Allen and Marjorie had many pleasant evenings studying this way of planning meals.

Drawn by Miss Florence Hunt.

FIG. 121. — Improper weight.

Drawn by Miss Florence Hunt.

FIG. 122. — Proper weight.

Of course, no busy mother will stop to calculate calories for every meal every day, but a little study will check up her daily practice. Mrs. Allen had been worried about her second little girl, who was under weight, and growing thinner. She studied the question of 100-calorie portions and found that the child was short some four hundred calories. Alice seemed not to be able to eat much more in bulk at one meal, but Mrs. Allen persuaded her to take more butter and cream, and also two or three eggs daily for their body-building quality. Alice had not enough building material or energy in her food before this to keep up the growth in height, and also in weight. On the other hand, Mr. Allen had

been troubled at the increase in his weight, which seemed to be in the form of unnecessary fat, in spite of his exercise. So Mrs. Allen planned for him food that contained a lower number of calories but still had bulk enough to satisfy his appetite.

**What did Miss Travers mean by a 100-calorie portion?** The amount of food that would give one calorie is so small that it is more practical to measure portions giving one hundred calories.

Study this picture first, for here are several of our common foods in amounts yielding energy equal to 100 calories. The egg is the exception, the energy being only 75 calories. Notice (Fig. 123) first that there is a great difference in the bulk of the different foods. Look at the

FIG. 123. — 100-calorie portions. 1, apple; 2, lettuce; 3, string beans; 4, egg; 5, whole milk; 6, cream; 7, butter; 8, white bread; 9, potato; 10, sugar, 4 lumps; 11, beef; 12, sausage; 13, oatmeal, uncooked.

lettuce, and at the half tablespoonful of butter and lumps of sugar. We could not live on a bulky food like the lettuce, or a condensed food like the butter; but we must have a mixed diet to furnish all the energy we need.

Here is a table that states what some people should have. Remember that this is an average. Have you studied averages in arithmetic?

FOOD REQUIREMENTS FOR A DAY

| Members of Family | Age | Weight, Pounds | Total Calories |
|---|---|---|---|
| Man | 40 | 154 | 2,680 |
| Woman | 38 | 120 | 2,160 |
| Girl | 16 | 110 | 2,200 |
| Boy | 12 | 75 | 2,250 |
| Boy | 6 | 40 | 1,600 |
| Total requirements | | | 10,890 |

**Using cream and butter.** Mrs. Allen gives an extra amount of cream and butter to the little girl who is under weight. She makes the cream so appetizing by whipping it and sweetening it with a little honey that Alice eats a few spoonfuls gladly with a piece of bread for her dessert. Do you think that it is extravagant to use these materials? On the farm, if you sell dairy products, you have a way of disposing of both the cream and butter at a good price. If, however, the milk of one cow is kept for home use, part of the milk

can be set for cream to be used on the morning cereal or with some dessert. The skimmed milk can be used for cooking, and, if need be, beef fat or even chicken fat added, when these have been nicely tried out. Cream is a digestible form of fat for children and for older people who cannot eat fat pork. You can see that cream

*A. Fowler, Photographer.*

FIG. 124. — 100-calorie portions of milk and cream.

| No. | KIND | WEIGHT OF PORTION, OUNCES |
|---|---|---|
| 1. | Cream (18.5 %) | 1.8 |
| 2. | Whole milk | 5.1 |
| 3. | Skim milk | 9.6 |
| 4. | Buttermilk | 9.9 |

is cheaper than butter, because the butter requires labor; and you must never make the mistake of thinking that a woman's time does not count. It is sometimes a high price to pay.

**More about the cost of food.** It is very difficult when we use food raised on our own place to calculate how much it costs. There are some facts about food

economy that we all ought to learn, because it is true that some kinds of food are always cheaper than others. Bread and cereals give us more nutriment for the money than meat, because the supply is larger and less labor is used in producing them. Here is a table that shows you the relation of money and food value received in a few common foods:

AMOUNTS OF PROTEIN AND ENERGY OBTAINED FOR 10 CENTS EXPENDED FOR BREAD AND OTHER FOODS AT CERTAIN ASSUMED PRICES PER POUND[1]

| Food Materials | Price | 10 Cents will Buy | 10 Cents' Worth will Contain | |
|---|---|---|---|---|
| | | | Protein | A Fuel Value of |
| | | Ounces | Ounces | Calories |
| Wheat bread | 5 cents per lb. | 32.0 | 2.9 | 2400 |
| Cheese | 22 cents per lb. | 7.3 | 1.9 | 886 |
| Beef, average | 20 cents per lb. | 8.0 | 1.2 | 467 |
| Porterhouse steak | 25 cents per lb. | 6.4 | 1.3 | 444 |
| Dried beef | 25 cents per lb. | 6.4 | .1 | 315 |
| Eggs | 24 cents per lb. | 10.0 | 1.3 | 198 |
| Milk | 9 cents per qt. | 38.3 | 1.2 | 736 |
| Potatoes | 60 cents per bu. | 160.0 | — | 2950 |
| Apples | 1½ cents per lb. | 106.7 | — | 1270 |

In a general way we can say that the more labor needed, the more the food costs. If there is a small supply of some food material and many people want it, then the price is high; and when the season is bad or some dis-

[1] U. S. Department of Agriculture, Farmers' Bulletin 487.

ease attacks the food, the supply becomes short and the price goes up.

Here is another table that shows how the calories may be divided among the foods served at the three meals:

| Food | 100-Calorie Portions |
|---|---|
| Milk | 20 (6 for each child, the rest for the adults) |
| Cereal | 5 |
| Eggs (for children) | 2 (counting ⅔ portion per egg) |
| Fruit | 5 |
| Green vegetables | 2 |
| Meat or meat substitute | 5 |
| Bread | 15 |
| Butter | 15 |

Suppose now that each one of you study her own family. Take the three meals a day that you are likely to have, using very simple dishes. From the tables given, see if you can decide if your family is having about the right amount.

This is a hard problem indeed, but your teacher may use it for an arithmetic lesson just as Miss James did.[1]

EXERCISES AND PROBLEMS

1. Explain the meaning of the word "calorie" to some one who has never heard the word before.

2. Explain why it is important to think about calories in planning food for a meal.

[1] For further work of this kind, see *Foods and Household Management*, Kinne-Cooley, and *Laboratory Handbook for Dietetics*, and *Food for the Family*, Mary Swartz Rose, The Macmillan Co.

3. Why is the 100-calorie portion of lettuce so much larger than the 100-calorie portion of meat, butter, and sugar?

4. Can you decide what kind of meals Mrs. Allen gave to her husband that would lower the number of calories?

5. Why did Mr. Allen need fewer calories in his diet?

## LESSON 29

### BUYING AND SELLING FOODS

ON the farm we raise much of our own food, but there are some things that we must buy. What ought we to learn about buying food? What can a girl do about selling food products?

It is very easy for people living in the country to buy many articles by mail, for there are large firms that send out catalogues of everything that is needed about the house and farm. Miss Travers from the State College said that we should be careful to send our orders to firms that are known to be good. It is possible that some things are made under conditions that are bad for the workers, and the goods be thus made unsanitary for the buyers.

Miss Travers told the club that her college had studied carefully the question of buying by mail, and had found that, when the women bought in the nearest town, they did quite as well in regard to price, and had the advantage of seeing what they were purchasing. On the other hand, Miss Travers appreciated the fact that, in winter weather and when work at home is heavy, ordering by mail is much more convenient.

In buying food it is an economy, when there is storage

room, to order large quantities from a wholesale dealer, — as sugar and flour, by the barrel.

**Honest weights and measures.** When we buy food in packages, in cans or bottles, we want to be sure that we are given the correct weight or measure. Is it not a good thing that our Government at Washington is helping us in this way? On May 11, 1914, at Washington,

*United States Department of Commerce, Circular of the Bureau of Standards, No. 66.*

FIG. 125. — Weights and measures that all housekeepers are advised to use.

D.C., the regulations were signed which make the manufacturers tell the weight, volume, and contents clearly on their packages of food. This applies to the whole country. The law itself was passed in 1913, but no one was made to pay the penalty for disobedience until September, 1914. Some states and cities have laws of this kind. The Bureau of Commerce has also published a pamphlet telling about household weights and measures. Here is a picture (Fig. 125) of the weights and measures that all housekeepers are advised to use. For

there is only one way that you can be absolutely sure; that is, to measure and weigh what you have bought. One of the business men of Pleasant Valley was so interested in this pamphlet that he bought a set of scales and measures for the school, that the pupils might learn how to weigh and measure accurately, and to test packages. The pictures that follow show some of the frauds used by dealers. One of the tricks of the trade is to use liquid measure instead of dry measure for certain food materials. You can see what a difference it makes in the beans in Figure 126. Look at the picture (Fig. 127) of the bottles. Is it not strange that the bottle that looks the smallest holds the most? Miss James said, "If you are tempted to buy some flavoring that seems to be cheaper than another, you had better find out whether you are really getting as much for your money."

*United States Department of Commerce, Circular of the Bureau of Standards, No. 55.*

FIG. 126. — See what a difference it makes to use liquid instead of dry measure for beans.

Cheap brands of food are often made of poor material. Ask the Woman's Club to write to the State University

for advice in regard to reliable dealers. We have pure food laws in our country, but we must learn to obey and enforce them.

**Clean food, again.** It is important in buying foods to consider cleanliness as well as the exact measure or

*United States Department of Commerce, Circular of the Bureau of Standards, No. 55.*

FIG. 127. — Three bottles of extract (front and side views). This shows the impossibility of correctly estimating the quantity of contents from apparent size of the container. The bottle which is apparently smallest holds the most, and *vice versa*.

weight. Clean milk and meat we have already talked about. It is not wise to buy salted almonds or any nut meats taken out of the shell, because sometimes these are prepared in uncleanly places. Crack your own nuts with a hammer, and take out the meats with clean hands and a nutpick. Fruits that come from

foreign countries, like dates and figs, we should be sure to wash carefully before using.

If we buy bread and cake from a baker's cart, as we do sometimes in the country, especially in the summer, we should know whether or not the bakery is clean. It is a great comfort in the hot weather to give up the baking for a while; but how unfortunate to buy food made of poor materials and in an uncleanly way. There are large bakeries in some cities where the bread is made without being touched by the hands, the paper wrapper even being put on by machinery. This is a matter for study by the Woman's Club. If there are bakery laws, they should be enforced. No one has a right to sell baked food on which flies have crawled. We all should be too intelligent to eat impure and unclean food.

**Cannot a girl help herself and her family by earning a little money?** Many mothers and daughters around Pleasant Valley have what we call the "egg money." In the lesson on eggs we have already talked over some points about selling eggs. The Girls' Club one day asked if Miss Travers and Miss James would not discuss with them the question of earning money in other ways. Barbara Oakes said that she wanted to go away to school and then to the State College, after she had finished at the Pleasant Valley School; but with their large family, she did not know whether she could ask her father to help her. The girls had already heard of the canning clubs and knew that in this way each girl could have a little income. As a result of their

discussion with their teachers and with their mothers and fathers, two or three of the club members decided to make bread and some other baked foods for sale. Miss James called upon several of the members of the Woman's Club who might be willing to be relieved of some of their baking. Several of the ladies were glad to try

*Courtesy of Miss Katherine Braithwaite.*

FIG. 128. — Raising ducks is a possible occupation. An old iron sink is used for a swimming pool.

this experiment and they have found that the girls can make really delicious bread, rolls, cake, cookies, and desserts.

**An experiment in making butter for sale.** A part of Mr. Allen's income comes from his selling his very good milk to a creamery. Marjorie said to him one day: "Father, you certainly have good cows. How differ-

ent they are from those on Mr. Blank's farm! Miss Travers noticed it one day when she was here and we were taking her to drive. She said, 'Why does Mr.

*Courtesy of the New York State College of Agriculture at Cornell University.*

FIG. 129. — Marjorie Allen and her new work and play.

Blank have such poor cows?' I could not help telling her that he has only three cans of milk from fifteen cows, and you have four cans from six." [1]

This little book cannot tell you very much about dairying, but the U. S. Department of Agriculture will

[1] This is an actual fact in one town.

send all the pamphlets about cows and butter that you need.

Marjorie astonished her father by asking if he would give to herself and her brother Frank one of the fine calves, if they would care for it. She was not sure that she could now pay for all its feed, but when it was older she thought that she could return to him what the calf had cost, in butter. Mr. Allen talked it over with Mrs. Allen, and finally allowed Marjorie and her brother Frank to try the experiment. The brother and sister read all the pamphlets that they could find, studied the question of food for the calf, and kept an account of its cost. They learned, too about butter making and ways of selling butter. The experiment has not ended yet, but in the meantime Marjorie is making butter with her mother. Do you suppose that some one of you could do this, too? Although they plan always to live in the country, Marjorie and her brother are very anxious to go to the State College, and they want to help educate themselves.

**Pin money from fresh vegetables.** A girl who will give herself the pleasure of working in a vegetable garden in the summer will probably be able to sell her delicious fresh vegetables. These can even be sent away by parcel post. You can get directions from the post office about mailing boxes to be used in this way.

### EXERCISES AND PROBLEMS

1. Study the labels on all the food packages and bottles that you have at home and at school.

2. If you have scales of any kind, measure a few of the food packages either at home or at school.

3. Measure the contents of a few bottles to see if they agree with their labels.

4. Find out the laws of your own state and town in regard to pure food.

5. What are some of the important points to remember in selling food?

6. Is it good business to sell material of poor quality? Why not?

7. Is it good business in selling fruit to put the best on the top and the poor underneath?

8. Can you think of other ways than those suggested in this lesson for a girl to earn a little money at home?

### REVIEW

1. What is the use of a thermometer?

2. Do you know how to use a Centigrade thermometer?

3. What is a calorie?

4. What is meant by a 100-calorie portion?

5. What are you going to be particular about when you buy food?

6. What is the government doing to help you to have pure food and honest weights?

7. If some one in your family seems to be under weight, what can you suggest?

## THE ELLEN H. RICHARDS HOUSE

You will be glad to know that all the townspeople in Pleasant Valley were delighted with the year's work in home making at the new schoolhouse. Mr. Roberts,

*Courtesy of Mr. R. J. Plauten.*

FIG. 130. — The Ellen H. Richards House.

the president of the Pleasant Valley Bank, was so pleased with the results both at school and in the homes of the valley that he gave the house that you

see in the picture (Fig. 130), to be used for home-making classes by the girls, and for the boys' clubs as as well. The house was named for Mrs. Ellen H. Richards, the great and good woman of Boston, Massachusetts, whose friends are found all over the world, and who helped to develop the teaching of home economics everywhere.

**What are some of the facts about food and health that a girl may learn useful to herself and her family?** This is the question at the beginning of the first chapter. Do you not think that you can all give an answer now? And would you not like to write a composition about it? Perhaps your teacher will have a gathering at the school of all the fathers and mothers. Maybe one of you can write a little play or pageant connected in some way with household arts for this closing party of the school year.

**And where is Pleasant Valley?** Perhaps you asked this question when you looked at the picture on one of the first pages. Pleasant Valley is your own home town; and, though it really has quite another name, it still may be Pleasant Rivers, or Pleasant Hill, or Pleasant Fields, or Pleasant Plain. Why not? In this wide country of ours there are many forms of natural beauty. Even in the dry sections where trees are grown with difficulty, there are still the far reaches of the plains and the beautiful effects of sky and cloud, sunrise and sunset. If our own town is ugly and unhealthy, it is not nature's fault, for the beauty and homelikeness

and the healthfulness of any place depend upon its inhabitants. Even the simplest and plainest village or countryside has one kind of beauty if it is kept perfectly clean. At the same time, it costs but little money in many places to plant trees and shrubs and to keep the grass green.

You must see, however, that it is something more than beauty in the things about us that we have been studying together. You boys and girls in your own school are to be the men and women who will make the homes and the town the best possible places for successful and happy living. Do you realize what it means to be citizens of a great commonwealth like this of our United States? Do you understand the word "commonwealth"? It is a good, old word that means a land where all the people share their wealth and work together for the good of all. We cannot succeed in making our country a commonwealth until we begin in our home and in our home town. More and more must our country stand for democracy for ourselves and the whole world. You must bring to the problems of the future strong bodies, and clean and strong hearts and minds.

## PAGES FROM MARJORIE ALLEN'S NOTEBOOK

**1. Utensils for the school lunch.** Polly sent me this answer, when I wrote to ask her for a list of utensils that they were using at the Big Tree School (see Fig. 6):

"With the money we gave and a part of our prize money from our school exhibit at the Erie County Fair, we bought the rest of our cooking equipment: 12 towels, 2 dish pans, 1 granite kettle (8 qt.), 1 granite saucepan (6 qt.), 1 basin, 1 dipper, 1 measuring cup, 2 toasters, 1 strainer or sieve, 2 large spoons, 1 paring knife. We bought large granite dishes so that we might cook enough food for lunch at noon. Soap, matches, holders, etc., were given by some of our Mothers. We also bought a small washboard which could be used in the dish pan to wash out the towels after using, and each week some one took the towels home to be washed there."

A friend of Miss James who teaches in the Extension Department of the Ohio State University sent this list:

| | |
|---|---|
| 1 two-burner oil stove | $4 or $8 |
| 1 oven to fit one burner | 1.50 |
| 1 dish pan (tin) | .10 to .20 |
| 1 drain pan (tin or granite) | .20 |
| 1 large container, 8 or 10 qt. (a kettle or stock pot retinned or granite) | .60–1.75 |
| 1 kettle, 6 or 8 qt. size (retinned or granite) | .60 |
| 2 covers to fit kettles | .20 |
| 1 colander (tin) | .10 |
| 1 tray | .10 |
| 1 spatula | .35–.40 |
| 2 tablespoons | .10 |
| 2 teaspoons | .10 |
| 1 measuring cup (tin or glass) | .10 |
| 1 can opener | .15 |

| | |
|---|---|
| 1 kitchen fork | $.10 |
| 1 large fork | .10 |
| 1 bread knife | .60 |
| 1 egg beater | .05 |
| 1 paring knife | .10 |
| 1 potato masher | .10 |
| 1 soup ladle (half pt.) | .25 |
| 1 wooden spoon (stirring) | .15 |
| 1 sauce pan (1 qt. size) | .30 |
| Total | $9.95 to $15.25 |

Small covered cans or jars are useful for holding supplies, as flour, sugar, salt, etc. A Mason jar or tin lard pail can be used. A pail for water and one for garbage are necessary. All garbage should be burned or buried.

**2. An easy way to write measures in our books:**

| | |
|---|---|
| oz. = ounce | cp. = cup |
| lb. = pound | pt. = pint |
| ssp. = saltspoonful | qt. = quart |
| tsp. = teaspoonful | gall. = gallon |
| tb. = tablespoonful | pk. = peck |
| | bu. = bushel |

**3. What food does for us.** Food builds our bodies, and gives us fuel; and so gives us heat and power to work. It also helps to make the body run properly — "regulates the body," Miss James says. She explained this by saying that one thing that water does is to help keep our bodies at an even heat.

**4. What do we mean by foodstuffs?** There are many kinds of food materials, but they are all made of a few substances called foodstuffs.

| Body Builders | Fuel Foods | Body Regulators |
|---|---|---|
| Protein | Protein | Water |
| Mineral matter or ash | Fat | Mineral matter |
| | Carbohydrates (Starch and sugar) | |

Cellulose, or vegetable fiber, is not digested, and does not nourish us, but it helps to keep the digestive tract in order. It is a good plan to use some bran in cereals and muffins.

**5. Some food materials have one foodstuff only, and others all of them.** This list helps me to remember the foodstuffs in different food materials:

Foods largely protein: lean meat of all kinds, fish, shellfish, eggs, cheese.

Foods rich in protein but with more of other substances than the above: milk, cereals, bread, macaroni, nuts, dried peas, beans, and lentils.

Foods largely fat: butter, cream, olive oil, bacon, lard, oleomargarine, fat from meat or nuts.

Foods rich in fat but with more of other materials than the above: milk, egg yolk, nuts, fat meats.

Foods largely carbohydrate: sugars, starches, honey, molasses, sirups, tapioca, potatoes, bananas.

Foods rich in carbohydrate but with more of other materials than the above: bread, cereals, macaroni, milk, sweet fruits, carrots, parsnips, corn, dried peas and beans.

Foods rich in mineral matter: milk, egg yolks, cereals made from the whole grain, fruits, green vegetables, dried peas and beans.

**6. Why do we cook, and how?** We cook food sometimes to make it look good to eat; to change the flavor; to make it digest more readily; to kill yeast, bacteria, and molds. We can cook in all these ways:

Heat direct from coal, charcoal, wood, or gas:

Toasting: Surfaces of food exposed and turned for browning.

Broiling: Thin portions of meat or fish exposed and turned for searing, browning, and short cooking of the interior.

Roasting: Thicker cuts of meat exposed and turned frequently for searing, browning, and gradual cooking of the interior. This is an ancient method. We use it in gas stoves when we cook directly under the gas.

Heat through some substance:

Cooking in water:

Boiling: Cooking in boiling water, temperature, 212° F., or 100° C.

Simmering, stewing, or "coddling." — Cooking in water below the boiling temperature, 180° F. up to 210° F.

Steaming: Cooking in a receptacle into which steam passes, 212° F. — or in a closed receptacle with steam or boiling water around the inner vessel as in a double boiler, or a "steamer," temperature from 200° F. to 210° F.

Cooking in fat:

Deep fat frying, temperature 350°–400° F.

Cooking by heated surfaces:

Pan broiling: Cooking of chops or steaks in a heated pan, without additional fat.

Sauter: To cook in a heated pan with a small amount of fat, enough merely to prevent the food from sticking to the pan and to hasten the browning process. "Baking" cakes on a griddle is one form of this.

Baking: Cooking in a heated oven, temperature from 300° F. to 450° F. or higher for rapid browning. Meat and poultry cooked in an oven are baked and not roasted, although we use the word "roast" for this method.

Braising: Cooking meat in a heated oven in a closed vessel, with a supply of water to keep down the temperature. This might be called an "oven stew."

These methods are sometimes combined in one process. In a brown stew, the meat is first cooked in a pan with a little fat to brown it, and to sear the outside for keeping in the juices, before the stewing begins. A "pot roast" is an old-fashioned method of cooking a solid piece of meat with a little water in a pot on top of the stove. The water simmers out, and the meat is browned.

**7. Something about baking.** Miss James says that the only way to test an oven is by a thermometer with a bulb that is really

in the oven. Mother says that she will have a hole bored into the oven when I have saved enough money to buy a long " chemical " thermometer that can be run in through the hole. The thermometers on oven doors are a help, but they are not exact. Miss James has a friend at Teachers College, Columbia University, New York, who sent her a pamphlet, " Oven Temperature," by Professor May B. Van Arsdale. Here is one table that she gives. The arrow means high temperature at first and then low.

| Slow | Moderate | Hot or "Quick" | Very Hot |
|---|---|---|---|
| 250–350 F. | 350–400 F. | 400–460 F. | 450–550 F. |
| Custards<br>Meringues<br>Sponge Cake<br>Angel Food | Bread<br>Gingerbread<br>Plain Cake<br>Cookies | Baking Powder Biscuit<br>Rolls<br>← Popovers | ← Pastry |

While I am waiting for my thermometer, I must do my best by browning pieces of white paper, and " learning by experience."

8. **Time-table for canning.** Mrs. Jane S. McKimmon of Raleigh, N.C., sent us this time-table to help our Canning Club. We sent to Mr. O. H. Benson, States Relation Service, U. S. Department of Agriculture, Washington, D.C., for full directions about our Canning Club.

| | Blanch | Liquor | No. Can | Exhaust Minutes | Process or Boil |
|---|---|---|---|---|---|
| Tomatoes . . . . . | —— | No water | 3 | 3 | 22 minutes |
| String beans . . . . . | 5 minutes | Brine | 3 | 5 | 1 hour |
| Sweet potatoes . . . . | Cook ¾ done | Pack dry | 3 | 15 | 3 hours |

| | Blanch | Liquor | No. Can | Exhaust Minutes | Process or Boil |
|---|---|---|---|---|---|
| Baby beets | Cook ¾ done | Brine | 3 | 5 | 2 hours |
| Apples | 1 minute | #1 sirup | 3 | 2 | 8 minutes |
| Berries | —— | #3 sirup | 3 | 3 | 10 minutes |
| Berries | —— | #3 sirup | 10 | 4 | 32 minutes |
| Peaches | 1 minute | #3 sirup | 3 | 3 | 15 minutes |
| Pears | 1 minute | #3 sirup | 3 | 3 | 25 minutes |
| Cherries (sweet) | —— | #3 sirup | qt. glass jar | 2 | 30 minutes |
| Cherries (sour) | —— | #4 sirup | qt. glass jar | 2 | 30 minutes |

(A heavy pack of peaches such as those that are layered in glass jars will require a 50° sirup.)

The following vegetables should be processed (boiled) the same length of time on each of three successive days.

| | Blanch | Liquor | No. Can | Exhaust Minutes | Process or Boil on Each of Three Successive Days |
|---|---|---|---|---|---|
| Soup mixture | —— | Salt and sugar | 2 | 8 | 1 hour |
| Corn | On cob 2 minutes | Water, salt and sugar | 2 | 10 | 1 hr. 15 min. |
| Garden peas | 1 to 4 min. | Water | 2 | 3 | 45 min. to 1 hr. |
| Okra | 3 minutes | Brine | 2 | 3 | 1 hour |

Brine is made of 2½ ounces (⅓ cup) of salt to 1 gallon of water.

To make sirups recommended, boil sugar and water together in proportions given below:

Sirup #1, use 14 ounces to 1 gallon water.

Sirup #2, use 1 pound 14 ounces to 1 gallon water.

Sirup #3, use 3 pounds 9 ounces to 1 gallon water.

Sirup #4, use 5 pounds 8 ounces to 1 gallon water.

Sirup #5, use 6 pounds 13 ounces to 1 gallon water.

1 pint sugar is one pound. A pound is 16 ounces.

**9. Canning meat at home.** Bulletin No. 101, Vol. V, New York State College, *Cornell University Talk about Canning Meat at Home.*

Sear the meat or chicken in a hot oven, in hot fat, or in boiling water, and steam it or simmer it until it can be torn apart. Pack the meat into the jars, fill the space with stock, and add one-half teaspoonful of salt to each pint of meat. Sterilize the meat for three hours, in a boiler (page 100). Unless the meat is first browned, it does not have so good a flavor.

**10. Starch experiments we like to try.** Starch turns a pretty blue color in iodine and water.

1. Grate a piece of potato into a small amount of water, and strain out the pulp. The starch settles from the water in a few minutes. Pour off the water, and add a drop of diluted iodine to the remaining starch. Dilute this mixture and with a dropper tube place a drop upon a slide. We could see the potato starch granules through our microscope.

2. Drop a teaspoonful of dry starch into boiling water.

3. Mix a teaspoonful of starch with a small quantity of cold water, and stir this into boiling water.

4. Mix a teaspoonful of starch with ¼ cup of cold water, and bring the water to the boiling point, stirring the mixture as it heats.

Why are 3 and 4 similar in result, and different from 2?

5. Test all these with a drop of iodine.

**11. Experiments with baking powder.** These are the experiments we tried when the Woman's Club met at the school. We liked No. 3 the best of all.

1. Dissolve half a teaspoonful of baking powder in two tablespoonfuls of water and heat in a test tube, or saucepan, over a flame; notice the effervescence when the bubbling is at its height, and hold a lighted match in the mouth of the tube. This is a simple test for carbon dioxide.

2. Dissolve 2 teaspoonfuls of cream of tartar in ½ cup water in a glass.

Dissolve 1 teaspoonful of bicarbonate of soda in ½ cup water in a glass.

Taste both of these.

Test both with litmus paper, noting the change of color. There are several vegetable coloring matters that change color in this way, in the presence of an acid or an alkaline substance.

Turn the two solutions together, and test with both blue and pink litmus paper, after the solution has stood for several minutes. What results?

Taste this mixed solution to see if you can detect any difference.

To prove that there is a substance still left, evaporate the water.

3. A pretty form of this experiment is to use, instead of litmus, the water in which red cabbage has previously been boiled, and which, therefore, contains some of the coloring matter of the cabbage. The changes in color are very striking, and prove conclusively that neither the cream of tartar nor the soda remains such.

**12. Where does that carbon in the plants come from?** When I asked Father how much he paid for the carbon for his plants he said, "Not one penny!" Miss James says that we cannot understand the whole true fairy story until we study biology and botany. It is *something* like this. Plants breathe through their leaves, and they take in carbon dioxide gas which is in the air. Then in some way the carbon is used in making starch and sugar in the plant. We eat the sugar and starch and so have the carbon. When we study more about physiology and nutrition, we shall understand how it is that we breathe out carbon dioxide gas! And as to the carbon in our coal, it is the carbon that was stored up in plants that lived so many thousand years ago, that we cannot count the years. This we learn about in geology.

**13. What does heat do to the foodstuffs?**

*Protein.* There are several forms of protein, with differences that we can understand only after a thorough study of chemistry.

The most important proteins in meat, fish, eggs, milk, old beans, and peas coagulate, or become slightly harder or firmer at a temperature below the boiling point of water. There is no marked chemical change; that is, the protein is not changed to another substance.

*Fats.* Solid fats are liquefied by heat, and freed from the tissue that contains them in animal fats like suet.

When a fat begins to smoke with heat, a chemical change is taking place. If intense heat is continued, all the hydrogen and oxygen are driven off and pure carbon remains. When the fat is "brown," giving the flavor we like, a part of the oxygen and hydrogen have been driven off. The "boiling" of fat in a kettle is ordinarily due to the boiling of the water contained in the fat.

*Starch.* Starch occurs in the form of granules. See Fig. 56. In boiling water, the granule expands and finally bursts, and frees the content, the pure starch, and the whole mass thickens.

Boiled with an acid the starch is changed to dextrin, a substance resembling a gum, and the mixture becomes thin; and this process continued changes the dextrin to dextrose.

With intense "dry" heat, as in toasting, the granule expands and opens, and the contents change to dextrin. Continued heat reduces the starch to pure carbon. The brown color and pleasant flavor in toast are a stage on the road to carbon.

*Sugar.* Sugar first melts with heat, then begins to decompose, giving off water. This is also a stage on the road to pure carbon. Caramel, a familiar flavor, is sugar in the brown stage, with the water partly driven off.

The art in applying intense heat to fat, starch, and sugar is to know the stopping point, — to reach the "brown taste" and stop short of the "burnt taste."

*Mineral matter.* The "ash" remains for the most part unchanged by heat, but may be lost in the water in which vegetables and meat are cooked if the water is thrown away.

*Vegetable fiber* is softened by heat and moisture, and the pro-

tein, starch, fat, and sugar are freed, making them available for our digestion and nutrition.

*Meat fiber* softens at a low temperature, that is, below the boiling point of water, with moisture; continued intense heat shrinks and hardens it. A tender steak fried with fat in a hot pan will soon resemble sole leather.

**14. Suggestions for the basket lunch.**

I copied this from Farmers' Bulletin No. 712, by Miss Caroline L. Hunt:

Paper napkins or paper towels of much the same size are very useful for packing lunches, and, like paraffin and parchment paper, may now be bought at a low price.

Napkins can be made also out of cotton crêpe at a cost of a very few cents each. The crêpe may be bought by the yard, and should be cut into squares and fringed. Such napkins do not need to be ironed.

In packing the lunch basket put at the bottom the things least likely to crush, and wrap the sandwiches, etc., into neat parcels, not all in one. Paper cups; jelly tumblers with covers, which can now be bought in several sizes; bottles with screw tops, such as those in which candy and some other foods are sold; and small jars such as those in which some goods are sold by druggists, can all be used for packing jellies, jams, and honey, and other foods.

*A Few Bills of Fare for the Basket Lunch*

1. Sandwiches with sliced tender meat for filling; baked apple, cookies, or a few lumps of sugar.

2. Slices of meat loaf or bean loaf; bread and butter sandwiches; stewed fruit; small frosted cake.

3. Crisp rolls, hollowed out and filled with chopped meat or fish, moistened and seasoned, or mixed with salad dressing; orange, apple, a mixture of sliced fruits, or berries; cake.

4. Lettuce or celery sandwiches; cup custard; jelly sandwiches.

5. Cottage cheese and chopped green-pepper sandwiches or a pot of cream cheese with bread-and-butter sandwiches; peanut sandwiches; fruit; cake.

6. Hard-boiled eggs; crisp baking-powder biscuits; celery or radishes; brown-sugar or maple-sugar sandwiches.

7. Bottle of milk; thin corn bread and butter; dates; apple.

8. Raisin or nut bread with butter; cheese; orange; maple sugar.

9. Baked bean and lettuce sandwiches; apple sauce; sweet chocolate.

**15. Preparation of Orange Pectin.** Miss Agnes Harris, Assistant State Agent of Florida, in charge of Home Extension work, sent Miss James a box of jellies and jams that her girls had made, and a pamphlet of recipes.

Use ¼ lb. white orange peel; ½ pt. water; 2 tablespoons lemon juice. Cut or scrape the yellow from the peel of the orange. Pass the remaining white portion through a food chopper; then weigh it. For each ¼ lb. of the peel, add ½ pt. of water. Add the lemon juice, mix thoroughly, and allow to stand 1 hr. Add 1¼ pts. of water. Let stand 1 hr., boil 10 minutes, and then let stand until cold. Place in a flannel jelly bag, press to remove the juice, and drain juice through a clean, flannel jelly bag. It may be prepared, poured into jars while hot, sealed, and kept for later use.

For *strawberry and orange pectin jelly* use ½ pt. orange pectin; ½ lb. sugar; ½ pt. strawberry juice. Mother and I are experimenting with pineapple, cherry juice, and other fruits.

*The alcohol pectin test.* Pour a teaspoonful of fruit juice, when cooled, into a clean cup, and pour in a teaspoonful of grain alcohol of 95% strength. Mix by gently shaking; then pour into a spoon. For jelly, if the pectin is in a solid lump, it is safe to add equal parts of sugar and juice; if it has not gathered in one lump, use less sugar, — say ¾ sugar to 1 of juice.

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